THRILLING WONDER STORIES

C. 5¢

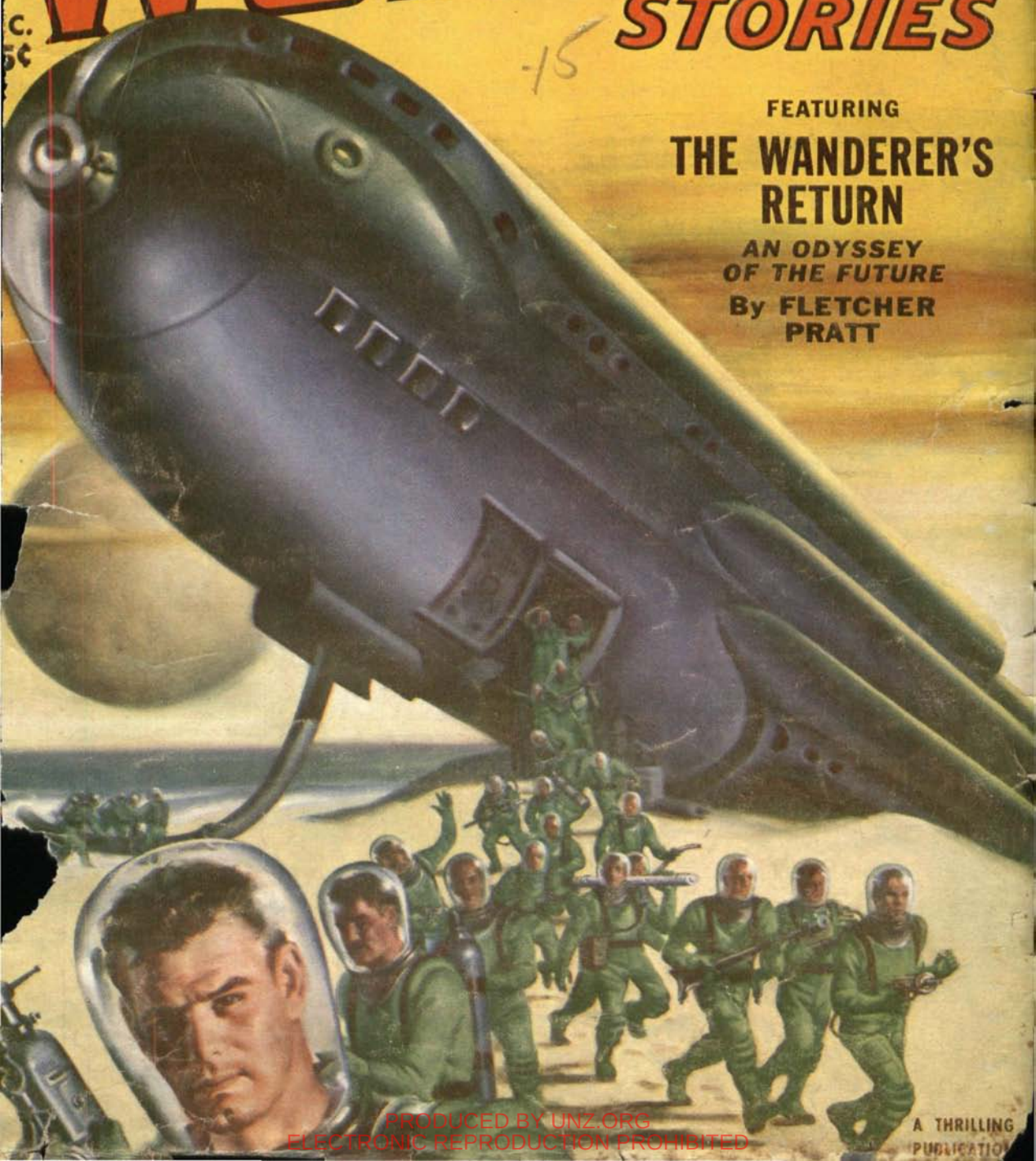
15

FEATURING

THE WANDERER'S RETURN

AN ODYSSEY OF THE FUTURE

By FLETCHER PRATT



A THRILLING PUBLICATION

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MIRACLE MEDICAL DISCOVERY BY FAMOUS SKIN DOCTOR GROWS HAIR ON BALD HEADS

Now! Medical scalp and hair specialist's KEMPOR formula actually can regrow new hair by carrying fresh, vital nourishment deep into starved hair roots!

Used successfully in his private practice on patients in all walks of life—now, for the first time this doctor's amazing formula is available for home use!

90% of all cases of baldness can be benefitted — according to famous medical authorities

We do not claim we can grow hair on every bald head but Dermatologists have computed that only about 10% of the hopeless cases of baldness are due to heredity, injuries and systemic disorders.

Some hairfall is normal. But abnormal amounts of falling hair are *nature's warning signal of approaching baldness.* Save your hair now while there is still time on our —

SATISFACTION OR MONEY-BACK GUARANTEE!

Use the formula (KEMPOR) that has been the noted skin doctor's closely guarded secret — tested and proved in his private practice!

CLINICALLY TESTED AND PROVED — GUARANTEED ABSOLUTELY SAFE AND HARMLESS! Formula Used by Many Doctors Themselves!

At Last! A Way to End the Curse of Baldness!

Do you suffer the shame and embarrassment of excessive falling hair, bald spots, dandruff scales, itchy scalp? Is premature baldness making you look old before your time, robbing you of your rightful share of life and love? Does your bald head make you look too old for that better job, that bigger pay check?

Remarkable Hair Growth formula Discovered by Noted Dermatologist Brings New Hope for Bald Heads!

No sticky grease—no muss or fuss! So easy and simple to use—takes just a minute or two a day! Guaranteed absolutely safe—even for youngsters! This revolutionary scientific formula, KEMPOR, is absolutely different and unlike any other hair and scalp product on the market.

It is based on a lifetime of actual medical practice, by one of America's leading skin specialists. KEMPOR, penetrates deep into the scalp to loosen and float away undesirable material that clogs the hair canal. The KEMPOR, Formula feeds and stimulates the roots, frees the hair to come up unhindered. KEMPOR'S antiseptic action cleanses the scalp, attacks infections that may lead to serious results if ignored.

Here are just a few of the actual case histories in the files of the noted skin doctor, discoverer of the KEMPOR Formula.

(NOTE: Since these cases were taken from the Doctor's private files, actual names have not been used, and pictures of professional models have been substituted to assure privacy to actual patients described.)

CASE 645 Physician, 45
Symptoms: Dry, irritated scalp. Excessive hair loss.
Result: "Excessive hair loss ceased entirely. *New hair growth replaced those which were formerly lost.*"

CASE 847 Housewife, 42
Symptoms: Considerable loss of hair *following permanent.* Hair came out in handfuls.
Result: *Hair loss ceased. A complete regrowth of hair occurred later!*

CASE 1206 Druggist, 26
Symptoms: *"Hereditary" premature baldness. Father largely bald at 25 years of age.*
Result: Scalp and hair clean. *No further unnatural hair loss since start of treatment.*

ACCEPT NO SUBSTITUTES!

Only KEMPOR is the perfected formula of the famous scalp and hair doctor who made this revolutionary scientific discovery!

FREE 14-DAY TRIAL OFFER
MONEY-BACK GUARANTEE

Use the **KEMPOR** Formula for just 14 days, according to simple directions enclosed with package. If, at the end of 14 days you are not completely satisfied that **KEMPOR** is everything, does everything we claim—return the unused portion—*and your full purchase price will be refunded!* You are the sole judge!

Guardian Pharmacal Corporation

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Gentlemen: In plain wrapper please send me month's supply of KEMPOR Formula with simple directions for use. On delivery I will pay postman $5.00, plus C.O.D. charge (enclose money order, cash or check and we will pay all shipping costs).

It is understood that after using KEMPOR for 14 days according to directions, I must be completely satisfied—or you will refund my full purchase price.

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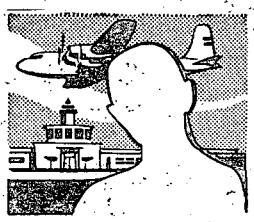
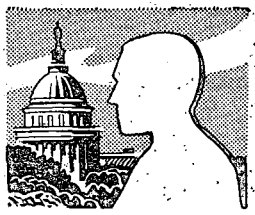
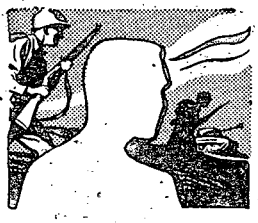


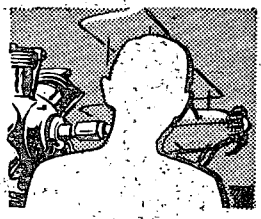
PRESIDENT of a leading airline.



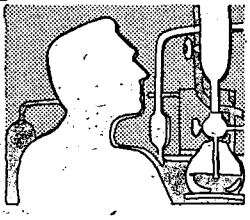
CHAIRMAN of a big government agency.



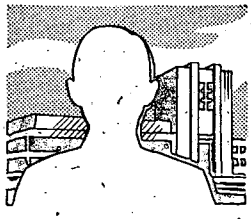
INVENTOR of a well-known U. S. Army rifle.



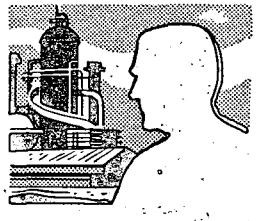
DESIGNER of a famous aircraft engine.



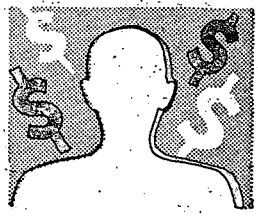
CHEMICAL director of nationally known research laboratory.



ENGINEER in charge of a famous company's engineering laboratory.



GENERAL MANAGER of one of America's largest chemical companies.



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THRILLING WONDER STORIES

VOL. XXXIX, NO. 2 A THRILLING PUBLICATION DECEMBER, 1951

Complete Novel

THE WANDERER'S RETURN.....**Fletcher Pratt** 10
A million miles from the Earth, an adventurer in space faces the twin terrors of dwindling supplies and dangerous scheming foes!

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SAMUEL MINES, *Editor*

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"While learning, made $5 to $10 a week in spare time. Now have a profitable spare time shop."—L. ARNOLD, Pontiac, Mich.

"I accepted a position as Radio and Television Technician . . . was promoted to manager of Television Service and Installation."—L. HAUGER, San Bruno, California.

"Have my own shop. Am authorized serviceman for five manufacturers and do servicing for 7 dealers."—P. MILLER, Maumee, O.

"Four years ago, a bookkeeper on a hand-to-mouth salary, am now a Radio Engineer, ABC network."—N. H. WARD, Ridgefield Park, New Jersey.

"When I enrolled, had no idea it would be so easy to learn. Have equipped my shop out of spare time earnings. Am clearing about $40 to $60 a month."—J. D. KNIGHT, Denison, Tex.

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Do you want good pay, a job with a bright future and security? Would you like a profitable shop of your own? The fast growing, prosperous RADIO-TELEVISION industry is making these opportunities for you. Radio alone is bigger than ever. 90 million home and auto Radios, 3100 Broadcasting Stations, expanding use of Aviation and Police Radio, Micro-Wave Relay, Two-Way Radio for buses, taxis, etc., are making opportunities for Servicing and Communications Technicians and FCC-Licensed Operators.

Television is TODAY'S Good Job Maker

In 1946 only 6,000 TV sets sold. In 1950 over 5,000,000. By 1954, 25,000,000 TV sets will be in use, according to estimates. Over 100 TV Stations are operating in 35 states. Authorities predict there will be 1,000 TV Stations. This means new jobs, more jobs, good pay for qualified men.

Many Soon Make $10 A Week Extra in Spare Time

Keep your job while training at home. Hundreds I've trained are successful RADIO-TELEVISION TECHNICIANS. Learn Radio-Television principles from illustrated lessons. Get PRACTICAL EXPERIENCE experimenting with circuits common to Radio and Television. Many students make $5, $10 a week extra fixing neighbors' Radios in spare time. Special Booklets start teaching you the day you enroll.

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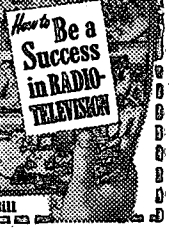

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A DEPARTMENT FOR SCIENCE-FICTION FANS

THE other day as we stepped trustingly out our side door, we were caught in a withering barrage of disintegrator rays fired by the five-year-old boy living next door.

He was wearing a Hopalong Cassidy shirt, but instead of a Colt was firing a sub-atomic pistol which buzzed, flashed a light and presumably emitted rays so far up in the spectrum that they could be detected only by the carnage they created. By a miracle we managed to escape in good order, to ponder upon a phenomenon.

By now it can hardly be a secret that there is a boom in science-fiction. Even if you have been hiding from the world, this information will have been thrust upon you. An interesting consequence is apparent in the editorial mail. A few years ago the bulk of the manuscripts arriving in a chain publisher's office consisted of westerns and detectives, with only a trickle of science-fiction. Today the reverse is true; even westerns, traditionally the stable element in the field, are running behind science-fiction in sheer bulk.

A Larger Frontier

As the tales of the frontier once stimulated imaginations, now a larger frontier is repeating the cycle and once again a new crop of writers is hammering at the doors with stories, with ideas never dreamed of in the lexicons of older scriveners.

If you are alert about such things you may even spot a trend in the fact that five-year olds are abandoning their western heroes and beginning to create a new fantasy play world in which Martians and Bems usurp the roles of Billy the Kid and Jesse James.

The water heater in our garage has been a test model rocket for some time and the fox terrier pup whose favorite sleeping place is under it, has been promoted to pilot, whether he knows it or not.

A trip in the family jalopy which takes us past a building site where might lurk an oil tank or a large boiler studded with rivets and spiced with portholes gives rise to the immediate cry of "spaceship!"

Nine-year-olds in our community are drawing maps of the solar system and computing flight mileages. On television they watch Captain Video and Space Cadet and Flash Gordon. It is admitted that such programs are a far cry from the thoughtful and serious medium which we here have tried to develop. Think of the gulf between the adventures of Flash Gordon and a story like Eric Frank Russell's THE STAR WATCHERS.

Endless Possibilities

But underneath there is a connection. A theme which is broad enough to attract the thinkers at one end and the children at the other, has endless possibilities. It has the twin buttresses of glamor and solidity.

It becomes apparent therefore that stf has already moved in to become our new literature of the frontier. This will hardly be news to many of us. But to the mass it is just beginning to make itself felt. And the impetus given by the movies, radio and television may well provide the take-off velocity it needs to move into big time.

Television particularly has embraced stf with open arms, perhaps only because TV producers were saddled with an ever-hungry medium and nothing to fill it. A virgin field like stf was a gift from the gods. The magazines were scanned for stories to adapt and one stf program after another blossomed. The latest heard from is sparked by Ted Sturgeon and opened with his well-remembered little story THE SKY WAS FULL OF SHIPS.

It is not mere bias—even an understandable bias on our part—which makes us feel that the boom in stf must continue to broaden and grow. Our entrance into the atomic age makes any other possibility unlikely.

My own childhood and youth, in city and country, were intimately bound up with auto-

(Continued on page 130)

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KNOWLEDGE
THAT HAS
ENDURED WITH THE
PYRAMIDS

A SECRET METHOD FOR THE MASTERY OF LIFE

WHENCE came the knowledge that built the Pyramids and the mighty Temples of the Pharaohs? Civilization began in the Nile Valley centuries ago. Where did its first builders acquire their astounding wisdom that started man on his upward climb? Beginning with naught they overcame nature's forces and gave the world its first sciences and arts. Did their knowledge come from a race now submerged beneath the sea, or were they touched with Infinite inspiration? From what concealed source came the wisdom that produced such characters as Amenhotep IV, Leonardo da Vinci, Isaac Newton, and a host of others?

Today it is known that they discovered and learned to interpret certain *Secret Methods* for the development of their inner power of mind. They learned to command the inner forces within their own beings, and to master life. This secret art of living has been preserved and handed down throughout the ages. Today it is extended to those who dare to use its profound principles to meet and solve the problems of life in these complex times.

AMENHOTEP IV
Founder of Egypt's
Mystery Schools

This Sealed Book—FREE

Has life brought you that personal satisfaction, the sense of achievement and happiness that you desire? If not, it is your duty to yourself to learn about this rational method of applying natural laws for the mastery of life. To the thoughtful person it is obvious that everyone cannot be entrusted with an intimate knowledge of the mysteries of life, for everyone is not capable of properly using it. But if you are one of those possessed of a true desire to forge ahead and wish to make use of the subtle influences of life, the Rosicrucians (not a religious organization) will send you A Sealed Book of explanation without obligation. This Sealed Book tells how you, in the privacy of your own home, without interference with your personal affairs or manner of living, may receive these secret teachings. Not weird or strange practices, but a rational application of the basic laws of life. Use the coupon, and obtain your complimentary copy.

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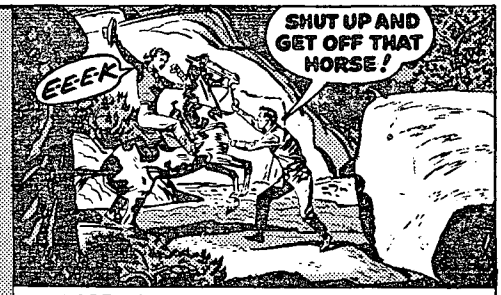
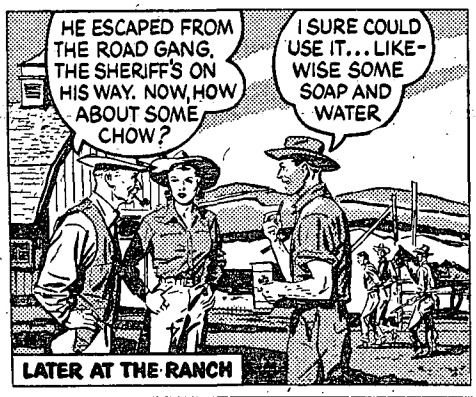
CHUCK HEARD A SCREAM AND THEN...



HOPELESSLY LOST IN THE RUGGED CANYON COUNTRY, DIANE BLAIR WISHES SHE'D TAKEN MORE SERIOUSLY THE "DUDE RANCH" RULES AGAINST RIDING ALONE... AND THEN...

ECHOING UP A NEARBY DRAW, HER CRY REACHES A YOUNG GEOLOGIST


HE ESCAPED FROM THE ROAD GANG. THE SHERIFF'S ON HIS WAY. NOW, HOW ABOUT SOME CHOW?
I SURE COULD USE IT... LIKE-WISE SOME SOAP AND WATER
LATER AT THE RANCH

WHEN IT COMES TO SHAVING QUICKLY AND EASILY AT A SAVING, YOU CAN'T BEAT THIN GILLETTES. THEY FAR OUTSELL ALL OTHER LOW-PRICED BLADES BECAUSE THEY'RE KEENER AND LAST LONGER. THIN GILLETTES FIT YOUR GILLETTE RAZOR EXACTLY, SO THEY NEVER NICK OR SCRAPE. ASK FOR THIN GILLETTES
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10-25¢
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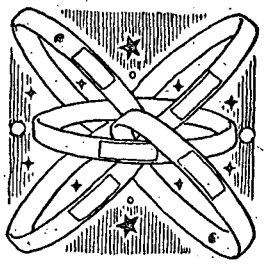
What's New in Science?



STARS CAN BE noisy. Dr. Harlow Shapley of Harvard College Observatory has been listening to them hiss at him on his radio set. Apparently stars of low luminosity, called flare stars, can blaze up to several times their brightness for a short while, then subside to normal. Red dwarf stars can send great flaming eruptions into space and kick up quite a fuss for a while. When that happens, the static pops and crackles in your radio. The huge Andromeda galaxy, among others, has been found to be very vocal, but if it is saying anything to us, no one has translated it yet.

IF MOSQUITOES BOTHER you, try pitching woo only under a full moon. Entomologists have discovered that there are five times as many insects around when the moon is new as when it is full. Seems like a handy arrangement.

JUNE 22 IS THE LONGEST day of the year, but that doesn't mean that the sun rises earliest and sets latest on that day. Actually the sun rises earliest in the northern hemisphere on June 15th and sets latest around June 29th. Somehow, the 22nd gets a minute or so more total light than either of these days.

EXPERIMENTS ON THE HYDROGEN bomb may lead man to duplicate the incredible energy which now rages in the stars, according to Prof. F. E. Simon, of the University of Oxford. If the boys turn Earth into a star in the process at least we'll have plenty of light to see where we're going.

CORTISONE OINTMENT, rubbed on the skin of animals, has been found to be as effective for arthritis as cortisone taken by injection.

A NEW AND SIMPLER method of measuring the distance to a planet or asteroid has been announced by Dr. John S. Hall of the U.S. Naval Observatory. The method employs the polarization of light reflected from the object to be measured. The degree of polarization depends upon the angle of vision and with this angle known the distance is easily calculated.

YOU CAN WRITE POETRY in a boiler factory if you feel like it. Experiments at Pennsylvania State College indicate that mental work is quite possible despite a very high level of noise. Accuracy is affected only to a negligible degree and quantity may actually be increased. Personally we don't see any point in writing poetry in a boiler factory, unless it is an "Ode to a Hot Water Heater."

THE UNIVERSE IS STILL expanding, if all our calculations are correct. The new 200 inch telescope at Mt. Palomar shows that distant nebulae are speeding away from us at the rate of 38,000 miles a second. This is popularly interpreted as meaning that the universe is "exploding" outward, an explosion which is actually taking place very rapidly, but because of the immense distances to be covered, takes ages of our time.

SPACE IS apparently not as empty as supposed. The newest observations indicate that it contains hydrogen, very sparsely distributed. There is about one atom of free hydrogen in every cubic centimeter of space. Which is very close to nothing. But there is so much space that the aggregate of all these atoms adds up to just about as much matter as in the stars themselves. And considering how many stars there are and how dense they are, this should give you an idea of how much space there is.

IF YOU THINK men have a tougher time of it than women, you will not be cheered by the report that lightning seems to be a worse danger for the male sex than the female. Lightning kills about five times as many men and boys as it does girls or women. It is suggested that part of the reason might be the fact that males work outdoors more than females.

A NON-QUANTUM THEORY of matter, advanced by Dr. Dirac of the University of Oxford suggests that all the loose electrical energy now kicking around in space will eventually clump into solid particles of matter. The quantum theory, holds that energy consists of particles as well as waves and Dr. Dirac believes that when the quantum theory is combined with his own mathematics, the result will provide clues to the birth of matter.

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The WANDERER'S

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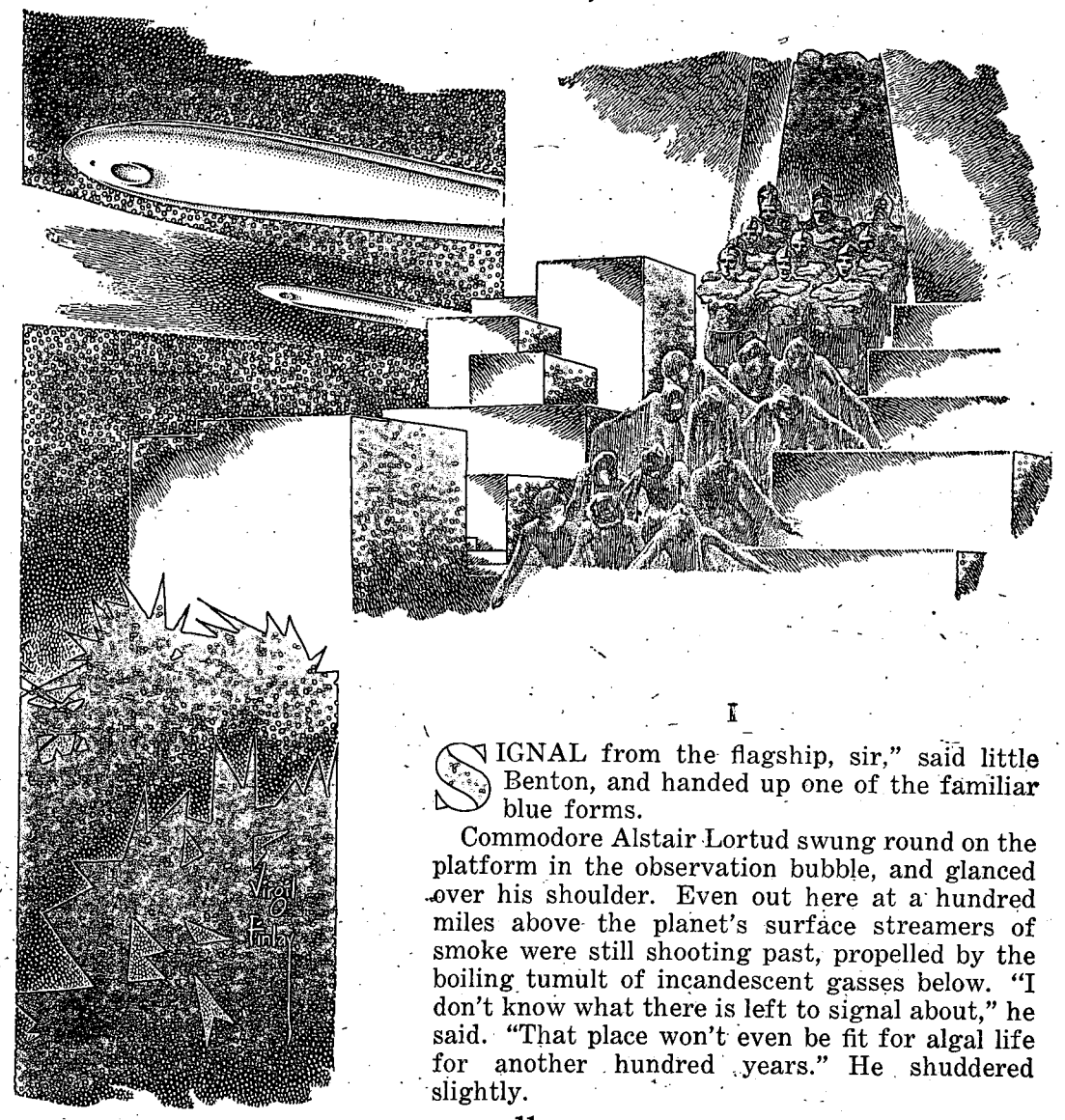
RETURN

A Novel by FLETCHER PRATT

A million miles from the Earth, an adventurer in space faces the twin terrors of dwindling supplies and scheming foes!



I

"SIGNAL from the flagship, sir," said little Benton, and handed up one of the familiar blue forms.

Commodore Alstair Lortud swung round on the platform in the observation bubble, and glanced over his shoulder. Even out here at a hundred miles above the planet's surface streamers of smoke were still shooting past, propelled by the boiling tumult of incandescent gasses below. "I don't know what there is left to signal about," he said. "That place won't even be fit for algal life for another hundred years." He shuddered slightly.

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"They had it coming. In fact, they started—" began Captain Pelham, and stopped as Lortud unfolded the form, and held up a hand.

"Listen to this," he said. "'Admiral MacKinnon to Commodore Lortud: Well done, Earth contingent. Operation against Ilya now completed. You are released from control of United Planets command as of 1123: 28XZ galactic time.' Nothing more to do but go home and pin on the medals, I guess, Captain."

A TALL blond officer with the stripes of a commander gazed at the burning tumult below. "Somebody else can have mine for this job," he said. "I'm not particularly proud of burning up a whole world and everyone on it."

Captain Pelham gave a short bark of a laugh. "They really ought to condition you psychological officers along with the rest of us, at least when you're going on punitive service," he said, and turned to the Commodore. "Shall I notify the squadron?"

"I'll send it. Benton! Take the following: Commodore Lortud to all ships, Earth Squadron: Operation completed. We are released from United Planets command. Squadron will proceed to point on present bearing, azimuth 22—" he glanced at the repeater instrument board "—arc 261. Orbit around *Massachusetts* there while reporting any deficiencies and casualties beyond those already indicated before setting course for home. . . . Wait a minute, Benton. Add this—Admiral MacKinnon sends us his well done. Commodore Lortud adds his heartiest appreciation to all hands, especially to *Bayern* for her gallant conduct in late battle." He swung toward the psychological officer. "That last okay with you, Yurka?"

The Commander nodded. "Very much all right. Those Germans have to be told they're not only as good as anyone else, but a little bit better. And the *Bayern* certainly did take us off the hook when that Ilyan tried to ram."

Captain Pelham picked up the intercom phone and gave the orders that would carry the *Massachusetts* out to the rendezvous point named by the Commodore, then turned back to the other two.

"I still can't quite understand it," he said. "You'd think that even if they were beaten in a war and had to surrender, they'd want to stay alive and try to build something. They must have known that they couldn't hope to discourage the whole United Planets force, even after they made those suicide crashes into the *Corrientes* and those six ships from 221 Aurigae. But they kept right on trying."

The ship tilted and the view from the bubble changed from the smoking ruin of a planet to the outer stars of Corona Borealis. Yurka said, "It's perfectly explainable if you know something about the history of psychology. The Ilyans were infected with something the old psychologists used to call *Schadenfreude,* pleasure in destruction."

"It's still hard to understand," said the Captain. "A disease?"

"A psychological one. It was supposed to have been bred out of the whole human race a couple of thousand years ago, but it was fairly common 'way back when Earth was the only inhabited planet. One of the main reasons why they used to have wars. The fact that you people are moderns and haven't a trace of it, is the reason why they had to give you all that psych conditioning before sending you out on this junket."

Commodore Lortud said, "But look here. If they can condition us to be willing to destroy the Ilyans, why couldn't they condition the Ilyans in the other direction?"

Yurka grinned. "You know the old recipe for rabbit stew? First catch your rabbit. That is, they wouldn't let themselves be taken for the purpose. And you saw how those few prisoners we had behaved. The minute we got to working on them, they told us just where the atom-bomb stockpiles were located and what the intentions of the Ilyan command were. They were so rotten with

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Schadenfreude that they were willing to see their own people destroyed, just as long as something went up. Only—"

"Only what?" said Pelham.

"Only I can't help thinking that it's too bad we had to do for the whole planet. There must have been some brilliant minds down there."

"Too damned brilliant," growled Pelham. "When they set up that field that lowered all the electrical potentials and grabbed those three ships from Gamma Ceti, I thought we were in for real trouble. And they might have gone on from there if the Council hadn't sent us here before they were really ready to make a big plunge at something."

"I suppose you're right." Yurka sighed. "From my point of view, though, it's still too bad that we couldn't have studied enough of them for long enough to determine how this infection became so widespread. What kind of a colony was it?"

"I can tell you that," observed Commodore Lortud, "because, as it happens, I've just been looking over some of the old family papers from the days when the first Lortud discovered the neptunium mines on E Centauri. Ilya was a mixed colony, settled by soldiers from Eastern Europe in one of the old wars. They made it a closed planet as soon as the regulations allowed. Wouldn't accept commercial space traffic even. That's why it was so hard to catch up with them when they started raiding ships and raising hell generally. The Council thought it was accidental at first, and didn't know that they had a gang full of this what-do-you-call-it on their hands."

The repeater clanged to call attention and the trio in the observation bubble saw the speed indicator slip down to zero. The intercom buzzed. "Calling Captain Pelham," it said.

"Pelham here."

"Navigation. We have reached assigned position, in slow orbit around Ilya."

"Very well." The Captain looked at Lortud, who said, "I suppose we'd better go up to Communications and get the reports. You can have them send on visual as soon as they get close enough."

He led the way, ducking his black, curly head through the door into the passage. A pair of cadets and a lieutenant saluted smartly and climbed into the observation bubble vacated by the senior officers. One of them said, "If I had that guy's money, nothing on Earth would make me come out here, a year

A Saga of Exploration

THERE have been always two kinds of explorers—the tough, hard-bitten kind who went out and got dysentery and bubonic plague and native spears in the spleen, and the ladies' club type whose real interest in life was making a big thing out of the lectures and colored slides which followed.

The first is basically an adventurer, the second basically an author. And the thing which has always fascinated us about the genuine adventurer is the professional attitude toward his work, the cool acceptance of fact, the absence of panic in danger, the ability to size up a situation and discuss it as abstractly as though his life might not be hanging in the balance.

Some of the great stories of all time were the sagas of returned explorers. Have a look then, at "The Wanderer's Return," the saga of Commodore Lortud. There's a gimmick in it you'll enjoy.

—The Editor

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and a half from home."

"If you had Lortud's money, everything on Earth would make you come," said the other. "The corporations are after the family holdings, but they can't do anything about it as long as he's in the service and turns up a job of exploration now and then."

COMMUNICATIONS, like everything else aboard the big fighting ship, was squeezed into the smallest possible space, with just room for three seats before the two-foot screen used for visual communication. Lortud took one, Pelham the second; Major Purdy, the communicator, slipped around from the side of the screen and settled himself in the third, throwing the dimmer so that only an occasional flare from the spark-gaps above and beyond the screen lit the compartment. He cut in the switch, joggled a control once or twice, and the huge circular bulk of the *Invincible* filled the view-plate, looking rather like a moon whose craters had been made regular and systematic. But the edge of one crater had the appearance of melted taffy.

"Come in, *Invincible,*" said Purdy, and threw the switch for the communications beam. The vivid blue light played on Lortud's face; on the screen the picture of the space ship faded into that of her commander, one of the long-jawed British type that centuries had failed to alter.

"*Invincible,*" he said. "We have six killed, three wounded, as a result of a hit near tube fourteen, which you doubtless noted. Ammunition remaining seventy-eight percent. Fuel, eighty-two percent. No significant air loss. We lost a water-tank in the fighting day before yesterday, though, and we're a bit low. I'd appreciate being allowed to draw some before going into super-speed for the trip home. Also we have a thirty per cent deficiency in protein food."

The Commodore turned to Captain Pelham. "Can we supply him?"

The Captain picked up the intercom phone and spoke briefly to Supply, then said, "Sorry. We can't spare over a thousand pounds of proteins, and have only water enough ourselves for thirteen months of operation."

"And it will take us twelve to get back to the solar system," murmured Lortud. "No factor of safety. How the hell did that happen? All right, *Invincible.* We will have you draw from one of the other ships. Resume orbit, and thank you."

The communicating light snapped off, the picture of the retreating *Invincible* came on the screen and walked across it to the edge as she circled the flagship, while the *Gloire* moved in to take her place. She had a smashed observation bubble, and a couple of men in suits were working on it, the flames of their torches glowing with electric brilliance on the side of the sphere that was turned away from the sun of doomed Ilya. She also reported a deficiency in protein foods and barely enough water for the homeward voyage.

Commodore Lortud frowned and made a note. The *Louisiana,* next to report, could spare some water, but not much. The *Miyako* had no water to spare and was short on proteins; the *Impero* was likewise short on water and the *Aquidaban* on protein foods. As the reports piled up, Lortud became shorter and shorter, and when the last one was in, he snapped:

"Purdy, get out an emergency signal to Admiral MacKinnon at once. Tell him we urgently need a supply-ship before departure for base. Pelham, call Hassinger and bring him up to my cabin. I want to find out why this expedition started out without enough supplies to get home on."

He stamped out of the compartment. Purdy switched on the lights and paused over the dials for fleet communication. "Pretty browned off, wasn't he? I'll bet somebody's head is going to roll."

"I don't know." Captain Pelham caressed the end of a white moustache. "When he's annoyed, he just gets in-

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genious. The real time to worry is when he suddenly becomes smooth and polite. The Lortuds are all like that. I knew his father."

"Odd name, though. What nationality is it?"

"American, like all of us for the past two thousand years, or he'd be on one of the other ships. I think, though, that the family was Greek, back in the days of immigration. Well, I may as well get on with it."

HE SWUNG his way along the passage to the commodore's cabin at the center of the ship, where the nearness of the artificial gravity machine made it a job merely to stand up. A yeoman came out as he reached the door; Lortud was seated at his desk, going over the papers the man had brought with quick, strong fingers that betrayed no sign of the extra gravitational burden in the place. He motioned Pelham to a chair, and did not look up until there was a knock at the door, and in answer to his, "Come!" a lieutenant with the scroll of the supply service above his bars stepped in.

"Sit down, Hassinger," said the Commodore. "Now there seems to be a little difficulty about the supply situation in the squadron, and I thought maybe you could help us clear it up." He smiled pleasantly.

"Yes, sir," said Hassinger.

"I notice from your report," Lortud tapped it with his finger, "that you considered this ship adequately supplied for the expedition."

"Yes, sir."

"We've been out only a little over twenty months, and you were informed that this would probably be a very severe campaign, weren't you?"

"Yes, sir."

Lortud's fist came down on the desk. "Then how in the blistering hell does it come that we have barely enough supplies to get home on? How does it come that we haven't a gallon of water to give damaged ships of the squadron that need it? What would have happened if this

COMMODORE LORTUD
—commander of Earth's battle cruiser MASSACHUSETTS

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campaign had lasted three months longer? Answer me, you congenital idiot, or I'll disrate you and set you to polishing dishes."

The Lieutenant's thin face flushed. "Well, sir—"

"Answer me!"

Pelham cleared his throat in an effort to relieve the tension. "Sir," said Hassinger, desperately, "I met the full squadron per capita requirements as laid down by the chief supply officer. We were informed that in view of the fact we would probably have heavy fighting we ought to go long on ammunition, because we could draw food and water from squadrons that didn't have to come such a distance as ours, and it would be fresher."

"As though we couldn't draw ammunition! Who was the illegitimate moron that thought up a doctrine like that?" He grabbed the papers and read: "De Santis."

There was a momentary silence. Pelham said, "Went out with the *Corrientes* when she was hit."

Hassinger said, "There's another thing, sir. After we got into action, Commander Yurka required the issue of extra high-protein foods on psychological grounds. Our consumption has been abnormal."

"Damned witch-doctor," growled Lortud.

Pelham said, "Part of this is either just bad luck or a matter of design, whichever way you want to put it, Commodore. The *Invincible* would have been all right for water if one of her tanks hadn't been hit, and it was pretty much the same with the *Dent Ardent's* protein supply that the Ilyans pushed that small bacterial missile through on. I think we ought to report in favor of placing those essential life-sustaining supplies farther inboard and behind armor."

"Do that, will you, Pelham? For that matter . . ." he considered. "Perhaps we need a new cruiser class for very distant operation. If we're going to have to deal with any more gangs like the Ilyans, at the ends of the galaxy. The thing that makes me boil, though, is being forced to appeal for supplies to these damned colonials. Makes it look as though we were losing our grip back on the old mother-planet. Next thing you know the Council will be declaring us a backward race and wanting to colonize *us*."

The intercom buzzed. Lortud picked it up, and the other two saw his dark brows draw together again. He said, "Acknowledge. Try to contact any other squadron commander within range. I don't think you can do it, but try."

He laid the instrument down and turned. "Do you know who that was? Purdy. He says MacKinnon's in superspeed and can't be reached. That probably means that we'll have to land on a planet somewhere and pick up supplies. Must have been in an awful damned hurry to get out of here. Lieutenant Hassinger, inasmuch as you claim to have supplied the ship in accordance with a doctrine laid down by the squadron supply officer, and he's in a place where he can't confirm or deny it—" there was a grim smile around the Commodore's lips —"you are not held responsible for the deficiencies of the original supply. However, you are held responsible for not protesting to me if this supply was inadequate according to your judgment, and for not reporting potential shortages before they became apparent. These items will appear in your record."

He stood up and the others imitated him. "Pelham, let's go down to Navigation and pick out a place where we can get some food and water. If there is any."

II

COMMANDER Eschelman, the navigator of the *Massachusetts*, spun his dividers across the star-map.

"On distance from here, it's about a choice," he said. "We're almost midway between them. It's merely a matter of which one offers the better chance of get-

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ting what we want."

"They're both semi-closed," observed Pelham, looking thoughtfully at the catalog of inhabited planets, "but that needn't affect us in this case. If we need food and water, we certainly come under the head of distress landings."

"However, this Kushan place is nearer the Earth," said Lortud. "If we get what we want there, we can shave about a week off the home trip. What do you think, Captain?"

Pelham said, "I don't know. If we miss out at Kushan, it will take another six weeks to Asmara, then three more to get back to our original position, so we might not gain anything in the long run. And I'm not too happy about Kushan. It's marked here as an Indian colony, which means there's a good chance they're vegetarians, living on a low-protein diet. And proteins are specifically what we need."

"Dammit!" said Lortud, "I wish they'd listened to me when I wanted to bring a supply ship. We could convert."

"Read the dope on the stars again, will you, Holmgren?" said Pelham to the assistant navigator.

The young officer flipped over the pages. "Asmara is the third planet in the system of H.D. 100211," he read. "Region of Arcturus. Kushan is the second planet of H.D. 99571, region of Alpha Herculis, which is Ras Algethi. It's an F-5 type star."

"And the other's a G," said Pelham. "As long as you ask my opinion, Commodore, I think that settles it. Kushan will be a lot hotter planet, and as an Indian colony, they'll probably be living largely on fruits, juicy vegetables and pulses. Besides, look here: Asmara's an Ethiopian colony, eighteen hundred years old. Weren't they a pastoral race back on Earth?"

"Ask Yurka," said Lortud. "He keeps track of those things. All right, Asmara it is, then. Plot a course, will you, Eschelman." He picked up the intercom and punched the button. "Communications? Take a general signal. Commodore Lortud to all ships: Have navigators plot course to H.D. 100211, Asmara. Report to Commander Eschelman for master-computation not later than 1424: 28 ZX galactic time. Rig all ships for super-speed. As soon as computations are ready, cease orbiting and follow the flag. Repeat that back to me."

The intercom gurked. "Very well," said Lortud, and turned to the others. "Gentlemen, I'm going to get a little sleep before the heat goes on. See you back at Australian space-port."

He strode out, slightly swaggering. Eschelman looked after him and remarked, "Wonder which ship will make it first. Captain, I'll bet you a fiver that the *Dent Ardent* beats the gang."

Pelham shook his head. "You don't get me on that one. I know that fellow Hondschoote over there, and he's pretty good. If he were an American instead of a Dutchman, I'd have him up there in the chair where you are. What were you looking so hard at the Commodore for?"

Eschelman said, "Feed the figures into the computer, will you, Holmgren? Why, Captain, I was just thinking that the boss displayed a startling interest in getting home for a man who was supposed to be conditioned for this expedition."

"I don't know." Pelham stroked his moustache. "Maybe the conditioning slipped after he got the release from the Admiral. You'd have to ask Yurka about that. But God knows, he's got reason enough to hurry home."

"Why? To clip his coupons?"

"Did you ever meet Penny Lortud? She's one of the most beautiful women God ever made."

"Oh—oh," said Eschelman. "I thought the conditioning was supposed to keep our emotional lives straight, too, during the cruise."

"So it is. I was suggesting that in addition to the business involvement, it might have some influence that he misses her."

From the side of the compartment Holgren said, "Beg pardon, Commander.

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I have a tentative course calculated. Will you check it and take a fix?"

Pelham watched as the navigator ran quick, experienced fingers along the tape that had come from the calculating machine, then turned to the quartermaster. "Ready with the chronometer?" he said. "I'm going to fix on Xi Booti; Arcturus is too big at this distance, and won't give a true bearing." He applied his eye to the telescope, raised a hand and called "Mark!" then repeated the process for two more stars.

As he turned back to Pelham the latter said, "You fellows have it easy these days. When I was a navigator on the old *Reliance* we didn't have any such thing as the Lortud calculator; had to work out all the steps for ourselves."

"It was the Commodore's father invented that, wasn't it?" said Eschelman. "By the way, you said something about his business involvements. I didn't know he had any except counting the money that rolled in."

"It's not as easy as that. The corporations, especially the Anthony Corp, have been trying to get their hooks into those neptunium mines on E. Centauri for a long while."

"Yes, I know that. But I thought that Lortud was pretty safe in spite of the dim view the Earth Council takes of family ownership in things like that. That was one of the reasons he accepted command of this expedition, wasn't it? To help prove that he wasn't just being idle rich, and was competent in addition to being public-spirited?"

"That's right," said Pelham. "But there's a catch in it. I was talking to him just the other day. He's worried for fear the corporations will go before the Council and ask them to make the mines public property on the ground that there isn't anyone to manage them. That is, if he stays away too long."

"Hm-m," said Eschelman. "They're trying to get him coming and— Yes?"

A messenger was inside the door with one of the blue forms in his hand. Eschelman took it and glanced at the signature. "Too bad you didn't take me on that bet, Captain," he said. "This is the *Impero* reporting with her plot of the course. . . . Wait a minute, though." He stepped to the calculator, picked up the tape and compared it with the figures on the message, then picked up the intercom instrument. "Communications? Take a message. Commander Eschelman to Commander Vivaldi, Navigator, *Impero:* Your plotted course disapproved. Fix on some other star than Vega, which is too large. Your course would have probable error of two minutes, fifteen seconds."

He turned to the Captain. "Those Italians! If we came into the Asmara system with an error like that, it would probably take us a week or two of running on rockets to hit the place after coming out of super-speed. Ah, here comes another one. Let's hope this one is right."

"Keep them honest," said the Captain. "I've got to go up to the con and take care of my own troubles."

ONE BY ONE the ships reported and dropped out of the orbiting formation around the *Massachusetts* that made the squadron look like an outsize model of a sodium atom to string out in a long line behind the flagship. Down in the spin-rooms the engineers set the subnuclear motors for automatic operation at super-speed, and the line of ships bounced like tennis balls as they tested in brief spurts of power. A messenger tapped at the door of Lortud's cabin. "Sir, the Captain says that all ships have reported ready except the *Southern Cross* and he expects her any minute."

"Very well. Tell him I'll be right up."

In the con, the hammocks that would hold officers and men during the first jerk of super-speed were already in position and the pressure turned on. One of the periscope plates showed a picture of blazing Ilya far below, wrapped in an atmosphere of smoke through which still jutted occasional tongues of angry flame. Ilya's sun blazed just at one side

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of it in this view and the dimmer was on.

Lortud glanced at the picture, shook his head slightly and turned to Pelham. "Ready on your side?" he asked.

"All departments ready."

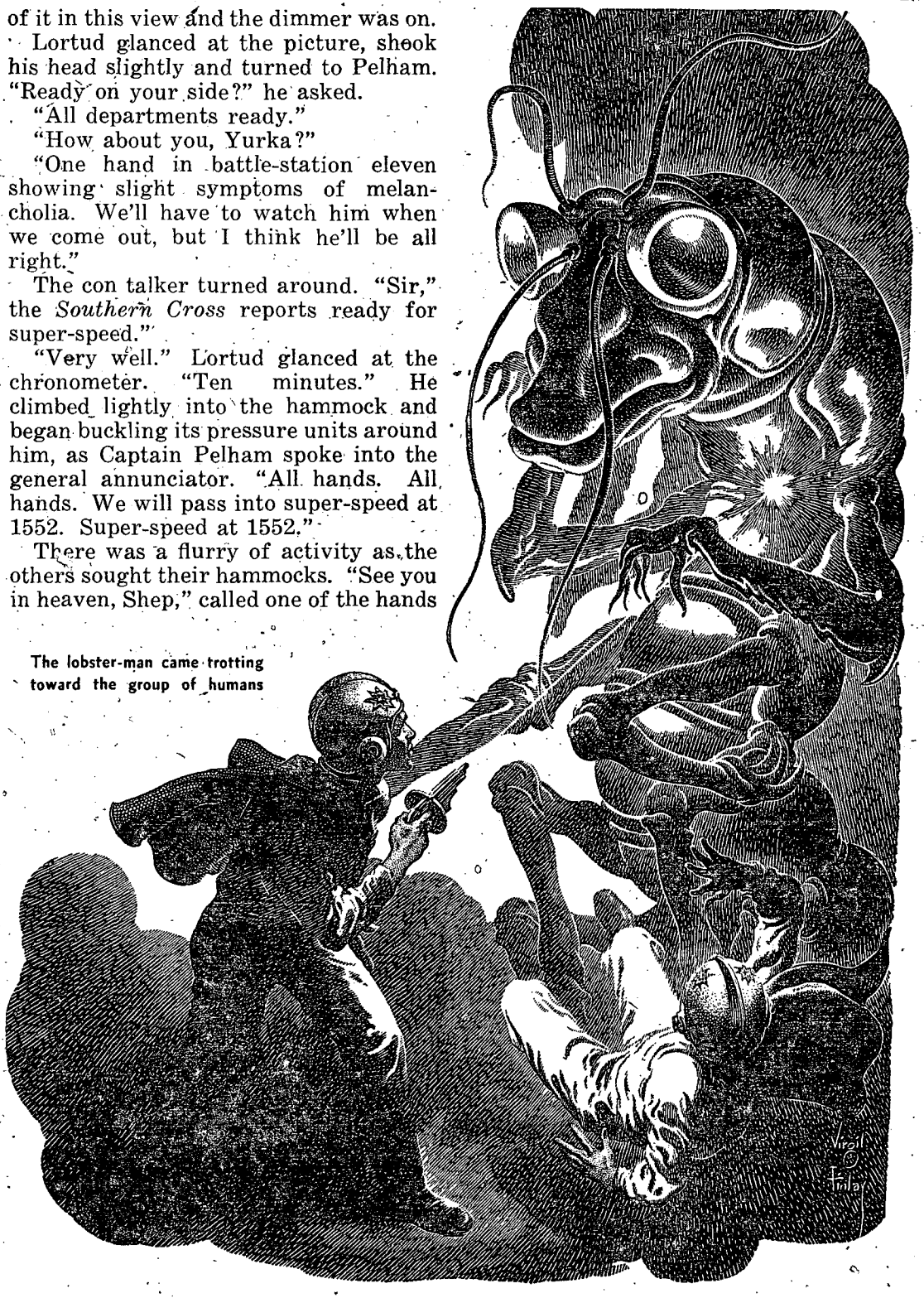
"How about you, Yurka?"

"One hand in battle-station eleven showing slight symptoms of melancholia. We'll have to watch him when we come out, but I think he'll be all right."

The con talker turned around. "Sir," the *Southern Cross* reports ready for super-speed."

"Very well." Lortud glanced at the chronometer. "Ten minutes." He climbed lightly into the hammock and began buckling its pressure units around him, as Captain Pelham spoke into the general annunciator. "All hands. All hands. We will pass into super-speed at 1552. Super-speed at 1552."

There was a flurry of activity as the others sought their hammocks. "See you in heaven, Shep," called one of the hands



The lobster-man came trotting toward the group of humans

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to another, and the talker, with his mike still on his face in the hammock, began to announce: "Four minutes to go. Three and a half minutes to go. Three minutes to go. . . . Sixty seconds, fifty-nine, fifty-eight . . . four, three, two, one!"

Captain Pelham's finger jabbed home on the button, and everyone felt the familiar jerk of pain as consciousness left them amid a shower of pinwheeling comets.

III

I KNOW it's irrational and I ought to turn myself over to Yurka for treatment for pathological worrying," said Lortud, "but this stage always bothers the hell out of me."

Pelham did not turn from the periscope plate he was watching. "I don't see why," he said. "There couldn't be anything much more restful than a couple of weeks spent in a state of virtual nonexistence, with nothing but gray on the plates and nothing to do but eat and sleep."

Yurka laughed. "That's just the point, Captain. Super-speed gives the Commodore a chance to return to a foetal plane of existence, without responsibilities, and he resents being recalled to reality. It's a very simple matter in psychology."

Lortud made a gesture of irritation. "No, it isn't. That damned nonexistence is a bore, if you want to know. I don't have your interest in the imaginary conquests one makes at a chessboard. I want something real to fight."

"A throwback," said Yurka.

"Call it anything you want to. What worries me is what would happen if two of those ships came out of super into the same space. It would be worse than being rammed by an Ilyan."

Yurka pointed at the plate. "There comes one that's safe, anyway," he said, indicating where one of the great balls bobbed across the field of vision and then smoothed out on her course as the rocket-jets were turned on. "Which one is she?"

"*Bayern*," said Pelham. "You can always tell her by those exterior shutters on the side ports. They're supposed to be automatic, but I wouldn't trust them myself."

"That makes seven," said Lortud.

The con talker spoke. "Sir, Communications has a message from the *Impero*. She reports safe arrival from super-speed and is on the other side of that small moon."

"Have communications tell her to join formation," said Lortud. "I think in view of the fact that it's a semi-closed planet, I'll take the *Massachusetts* down first while the others form a cover circle. You never can tell what you're going to run into. We'll cruise in for a landing on the day side, at the shore of one of those seas. We can pick up the water directly, while we're negotiating. We haven't any charts on this place, have we?"

Pelham said, "No. When a planet applies for closed status, the Council only issues charts to diplomatic craft. But it seems normal enough from this distance, except that those polar caps are rather small and there doesn't seem to be much cloud in the atmosphere. Maybe they have a water shortage themselves."

"*Miyako* reports in, sir," said the talker.

"You might call Eschelman and ask him to look up the other planets in this system, just in case of emergency," said Lortud.

"I've already done that," said Pelham. "They're not much use. Number one is a dust planet, with no water. Number two's too small; lost most of its atmosphere. Four and five are methane. If we don't strike it rich here, we'll have to go find us another system."

Lortud's lips tightened. "By God, we better get what we need here! I'm not going to go wandering all over the universe."

The talker said, "Sir, Communications reports the *Chacabuco* and *Gloire* have arrived safely from super-speed."

"Very well," said Lortud. "That leaves only one." He picked up the intercom.

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"Communications? As soon as the remaining ship joins, send out an all-squadron signal for a ring formation with the flag at the center. I intend to make a slow descent on the daylight side of this planet for the purpose of landing. They are to maintain ring formation above, five miles in atmosphere, or as much lower as necessary for close observation. Six battle stations on each ship to be manned; emergency watches in all power rooms until cancelled by signal." He turned to the others. "I'm going up to the bubble. Want to come with me, Yurka?"

AS THE door closed behind the pair, a lieutenant wearing the gold shoulder-cord of the Officer of the Day said, "Sir, would you mind explaining something? They taught us at the Academy that that circular formation was awfully weak if you were attacked."

Pelham smiled. "Only if you're attacked in space and from space. You forget that a closed planet is not allowed to have space ships, and Lortud's formation is just the thing against anything coming up from the ground. The Commodore remembered; that's how he got to be Commodore, by remembering all the factors in the situation."

The ship had been turned so that the two men in the observation bubble could look downward at the surface toward which they were riding, much as though they were in the seats of a helicopter lift. It was shortly after dawn at the spot toward which they were descending. The glare from the braking rockets back in the center of the ship threw a weird, more-than-sunlight brilliance across the tops of stunted trees and a white sand beach that seemed almost waveless.

Yurka said, "Do you know, Commodore, what I'd most like to do when we land? Get out on that beach and have a swim."

"Perhaps it can be arranged," said Lortud. "What do you make of the place so far? I'd say those trees looked like acacias, which would mean a dry climate, fairly hot."

"In this region, yes. Might be a desert area, though. I haven't seen a sign of any cities, or even any buildings."

"There was something among the trees in that range of hills out there, toward galactic east. Looked like an overgrown beehive, but it was big enough to be about the size of a cathedral. What I don't see are any signs of animal life, not even birds."

The annunciator clicked and spoke, "All hands. Laboratory reports air eight percent high in nitrogen content, fourteen point two percent deficient in water vapor. Gravity, point eighty-four. No apparatus necessary, but landing parties should take precautions against overexertion."

Below, the tops of some of the trees suddenly began to shrivel in the rocket-blast. Lortud picked up the intercom. "Pelham? Yurka and I will make a landing from the port below the bubble, and see what the score is. Equip a landing party with side-arms to accompany us, and break out a helicopter lift in case we don't make contact. You might also start taking water at once and if there's no sign of interference, call in the *Invincible* and *Impero* to do the same. They're the shortest on water."

The *Massachusettts* touched the ground with a gentle bump, rocked once or twice and settled into the nest she had dug for herself. From below the bubble there was a clamor of equipment and the sound of feet along the passages. Both men felt suddenly lighter as the ship's artificial gravity went off and was replaced by the lesser attraction of the planet.

"Let's go," said Lortud and led the way to the port compartment, where the detail of ten was already waiting, gas and rocket-pistols strapped to their sides. A bright-eyed cadet saluted smartly. The airlock closed with a hiss of pressure. "All right, Kocynski," said Lortud. "Lower away."

The cadet swung the handle of the

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indicator. With a clank of machinery, the compartment was lowered to the ground, tilting slightly with the unevenness beneath, and as Lortud swung the lever, the door slid back to release them on Asmara.

IT HAD been a good landing, not thirty feet from the water's edge, which they were facing. To the left, the acacia-like trees followed around the curve of the shore and ran back up a slight slope in a many-armed tangle. The sand was firm underfoot, but showed no footprints or other markings. There was no wind, and not a sound anywhere except the rattle at the port of the ship, where a suction hose was emerging and being directed toward the water's edge by invisible hands from within.

"Spooky sort of place, isn't it?" said Yurka. "Doesn't seem to be overpopulated."

"That's the whole point of colonial planets," said Lortud. "What's that?" He pointed, then strode toward and picked out of the sand a black object from which dangled thin bones. "Looks like the skeleton of a snake, but there isn't any head."

"Maybe somebody—" began Yurka, but was interrupted by a squawk from the lowered landing compartment and a loud-hailed voice which shouted: "Commodore Lortud! *Aquidaban* reports slow-flight, large-size aircraft approaching from the south, probably helicopter."

"Who's the talker?" asked Lortud, and as the hand stepped forward with his mike to his lips, said, "Lortud to Pelham: I will receives natives. Bring *Invincible* down and have her start taking water. Belay that helicopter lift for us, though. If these people are going to make the contact I won't need it."

The talker repeated the message, listened attentively for a moment, and then said: "Sir, the ship reports that the water is fresh with a small amount of strontium salt."

"That doesn't mean anything. Just acknowledge. All right, Kucynski. Get your men spread out to cover us, except for this talker, and if you have to shoot, shoot to kill. I'll give you a hand signal. Yurka, you stay with me; I may need your help in interpreting these people's reactions."

A shadow fled across the beach as the huge round bulk of the *Invincible* settled slowly into position beyond the *Massachusetts*, the acacia-like vegetation bursting into brief flame at the touch of her blasts. The landing party spread out, some behind the landing compartment, others among the edges of the trees, and there was a mild amount of swearing as they discovered that the acacias had thorns.

"There it comes!" said Yurka, and pointed. Far down the beach, picked out against the cloudless blue sky, a speck grew in size. It approached with a curious buzzing and a fly-like motion.

Lortud gazed at it under a shielding hand. "Well, I'll be damned!" he said. "It's both an ornithopter and a helicopter. Some of these colonial races come up with the niftiest ideas."

Yurka said, "I'm not so sure this is good. It might indicate a regressive culture-pattern."

"You mean because ornithopters are fundamentally inefficient as powered vehicles? Nuts! You psychs would build a theory out of anything. Get practical."

The whirring and flapping monstrosity came lower, circled once around the *Massachusetts*, appeared to notice the three visitors on the beach, and buzzed to a landing a hundred yards or more away. It was at least thirty feet long. A door in its side opened, a set of steps was let down, and someone within rolled a piece of red carpet down the steps. Lortud started forward.

"No, wait," said Yurka. "Better psychology to make them come to us."

THE OCCUPANTS of the plane seemed in no particular hurry to do that, but after a few minutes in which there seemed to be stirrings behind the

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windows of the craft, a procession began to emerge.

It was headed by an extremely tall negro with a fudge of chin whisker, dressed in a long white mantle, embroidered in brilliant color. On his head he wore something like a four-decked papal tiara, and he advanced slowly with high, prancing steps, looking down his nose. Behind him came two more, only slightly less elaborately rigged out. Around the arms of one coiled an enormous snake, whose head he was holding. The other carried an uplifted sword. Behind them in turn came a little parade of men carrying short rifles, two and two.

"Formalists," breathed Yurka. "This is definitely not good!"

"Shut up," said Lortud out of the side of his mouth.

The leader of the group advanced to within a few paces, held up his hand and began to speak, in a sonorous outpouring of syllables.

"What the hell is he saying?" said Lortud. "I can't understand a word."

"That's what happens when a planet is closed for a few hundred years," said Yurka. "They develop local dialects. Wait a minute, though."

He took a step forward and lifted his own hand. "Please repeat more slowly," he said, then over his shoulder to the Commodore, "He's talking Universal all right. It's just that it sounds queer. If you watch his lips, you can get the form of the words."

The tall negro raised his hand again and spoke more slowly. "In the name of the Most High God Mashasha and Zaudito whose blood is life-giving water, I command you to depart from the planet of the Kaicones, which is closed to exterior contacts. I am Ras Tekla Giorgis."

Lortud said slowly, "I am Commodore Lortud of the Earth squadron in United Planets punitive fleet fourteen. We are in distress for lack of provisions and water, and will pay for what we need."

Ras Tekla Giorgis raised his hand again. "The children of the Most High God Mashasha are forbidden to accept unclean articles produced on planets not under his blessing. For know you, that the unclean universe and all that is made in it shall vanish away in a moment, in a puff of flame, and we will not suffer ourselves to be contaminated."

"Oh, my God," murmured Yurka, "religious fanatics!"

Lortud said, "It's contrary to the laws of the Council of United Planets to refuse help to any ship in distress. And we're an official squadron."

The hand went down and came up again. "This Council also is of the unclean, and shall pass away. The Most High God Mashasha forbids us to contaminate ourselves to obey its laws."

Yurka saw a vein begin to swell at the edge of the Commodore's forehead. He put a hand on Lortud's arm. "Let me try," he said, and stepping forward, lifted his own hand.

"Ras Tekla Giorgis, would it not spread the light of your most high god farther in the universe if materials produced under his hands were carried to other worlds?"

[*Turn page*]

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The idea appeared to strike him as new. He turned and whispered for a moment to the pair with the sword and snake, then turned back. "No," he said. "For know you, that all that is on this planet is the body of the Most High God Mashasha, or the blood of the Goddess Zaibutu. And if part of their being were separated from them at the moment of the coming of the flame, they would suffer intolerable agonies."

"Look here," said Lortud, and flung a pointing hand toward the *Massachusetts*. "This is a warship. It carries guns and rockets that shoot. Now if you're going to get technical about this, so am I. I want some provisions and water for my ships or I'm going to take them." He swung to the talker, but before he could give an order, one of the Kaicone soldiers ran forward, grasping his leader's arm, babbling excitedly and pointing to where the ship's intake hose was being coiled in, spilling splashes of water on the bright sand.

"They steal the blood of Zaibutu!" bellowed the Ras. "They are birds!"

The man with the snake gave a shout, knelt down on the sand and stretched out its head; the man with the sword gave another shout, swung his blade up and with one stroke, severed the reptile's head.

Somebody shouted something like "Malala!"

"Down!" cried Lortud, and Yurka found himself knocked flat as a missile zinged ominously over him to burst with a roar against the *Massachusetts*' side.

Lortud had his pistol out; it sissed as he let go a rocket charge and the man with the sword collapsed, a flame bursting from his middle. The Ras was down, too, his tiara jumping across the sand where it was struck by a miss.

The air seemed filled with projectiles, bursting in bright spots of flame where they struck. The men of the landing party were criss-crossing the beach with their shots, running a pace or two and dropping to fire again while the Kaicone soldiers raked the entrance to the landing compartment. Then, with a tremendous double BOOM! something arched from behind the trees and struck the topside of the *Massachusetts* in a burst of liquid flame.

"Back in!" bellowed Lortud. "They've got a thermite gun there!"

A shadow flashed past as one of the Earth ships above circled toward where the shot had come from. Then the little group were inside and the door clanging shut, one man slumping across the threshold and another whimpering slightly as he gripped a hand that had been mashed to a stump.

"All here?" demanded Lortud.

"Lost three," panted Cadet Kucynski. "Couldn't do anything for them. They were hit by explosives."

"Lift away," ordered the Commodore. As the compartment rose, it rang to the shock of two more explosive bullets and little dents appeared in the side.

IV

ALL RIGHT, Purdy," said Lortud. "I want that report to go on special space transmission to the Council at once. Then you can feel around the local band and, if there's anything in this region, give it to them too, as an information broadcast. I don't imagine there will be, though, outside of something under super-speed."

"What I'd like to do is go down there and blow those fellows apart," said Pelham hardly.

"We'll be lucky if they don't hold us blameable as it is," said Lortud, a trifle grimly. "The general rule of the Council is that the outsider is always wrong."

"Yes," said Yurka. "We quite clearly violated one of their religious taboos in taking water. By the way, did you notice that old harpy yelled we were birds just before he gave the signal for opening fire by chopping off the snake's head? I'll bet birds never developed there, and they only have the word."

"I didn't see any insects, either," said Lortud. "But that doesn't mean much.

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We weren't there long enough, and we were in the early morning, which is the wrong time of day for insects anyway. But that reminds me, I think I'll make a supplemental report, asking for an investigation of local conditions, including customs. It's all right for a planet to close up when it wants to develop its individual culture, but the rest of us should at least be informed as to what goes on. I'm not a bit happy about making for another semi-closed planet after that experience, and I have half a mind to run for home on what supplies we have."

"The *Impero's* very low on water and the *Miyako* is getting there," said Pelham, "and most of the other ships have spent some during the trip to Asmara."

"We have full tanks now, and the *Invincible* nearly as much. We could beef them up and cut the protein ration."

Yurka said, "I'm afraid I couldn't consent to that, Commodore. Aside from the fact that the medics will tell you that insufficient protein will make the men physically inefficient, you'd have half a dozen cases of various kinds of neuroses on your hands within three days after cutting protein. That's the Gaynor reaction and there isn't anything better established in space psychology."

Lortud growled in his throat. "I could make it an order. I'm commander of this squadron, and it wasn't organized to hunt for pork chops for the crews, dammit! You faith-healers make me sick!"

Yurka said, "You can order anything you wish in the squadron, sir, but I'm afraid psychological reactions aren't under orders."

"All right, dammit! I wasn't arguing with you." He picked up the intercom. "Navigation? Is Eschelman there? Oh,—off watch? Well, Holmgren, suppose you start the job of setting a course for Kushan—yes, the semi-closed planet over in the region of Ras Algethi that we were looking up before we came to this condemned place." He punched the buttons again. "Communications? An all-ships signal: set a course for Kushan, report to Commander Eschelman for master-computation. No hurry on it; we can't go into super until you send that report in and get an acknowledge."

Yurka said, "Would it cause an unreasonable delay if I sent in a report, too? I think a danger-point is apt to develop if closed and semi-closed planets are allowed to work up a degre of religious fanaticism such as we ran into down there. They're trying to keep everybody out, but it just might twist around to the point where they wanted to take other planets in."

"Thinking of another infection like that on Ilya, eh?" said Lortud. "All right, write your report and I'll endorse it. I don't think it will do you any good, though, with the Council as determined as it is to let cultures develop along their own lines."

The talker said, "Sir, the *Gloire* asks if you need a repair party for the damage caused by that thermite shell. They have a heavy reserve of asterite steel."

Lortud glanced at Pelham. The Captain said, "Tell them no, thanks. We've inspected and it was low-grade thermite, the old-fashioned kind and not radioactive. Looks ugly but not much damage."

Lortud said, "I'm going to my cabin. Have me called when we're ready for the jump."

WITH a jerk the timeless gray of super-speed on the periscope screens gave place to the flaming yellow of star H.D. 99571. Brilliant as Venus and as shrouded in cloud, the planet Kushan loomed dead ahead. Pelham swung the engine indicator to "Rockets—Slow" and remarked, "Nice job of navigation. Right on the nose. You can call the Commodore."

Yurka said, "What I don't understand about him—" and stopped.

"What is it?" asked Pelham.

"Never mind now. I was just thinking about something that didn't add up during the super-speed run. But a psychological officer shouldn't talk until he has a clear case."

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Pelham turned and looked at him. "Do you mean—"

Yurka nudged him just as Lortud came through the door and simultaneously the talker announced: "*Dent Ardent* reports in, sir."

The Commodore stepped to the screens and glanced over what they showed. "Didn't know it had a cloud cover," he said. "They ought to put those things in the catalog. Yeoman!"

"Yes, sir."

"Take down the following, to be sent out by Communications as soon as the circuits are clear. All ships signal: Formation for approaching planet will be arrow, *Massachusetts* leading, *Impero* imediately behind, *Louisiana* and *Chacabuco* as flankers—they're the best gunnery ships, but you needn't put that in the signal—rest to follow in order of arrival. Maintain visual contact. *Impero* to follow *Massachusetts* in when flagship lands and being taking water immediately, but without discharging landing party until signalled by flag. That's all."

The lieutenant who had asked about the circular formation as they approached Asmara gazed admiringly at the broad back as Lortud went through the door on his way to the bubble. "How does he do it?" he said. "I wouldn't have figured out that approach on a suspicious planet with cloud cover in three hours."

"Hmpf," said the cadet who was operating the screens. "You would if your name were Alstair Lortud. We were figuring out in junior mess yesterday that he's spent more time in space than on Earth, and this is his fourth punitive expedition."

Down in the bubble Lortud and Yurka watched the shining clouds drift up until they were surrounded by a dazzle so bright it hurt the eyes. The reports came through steadily; gravity a trifle above Earth's, high percentage of water-vapor in an atmosphere otherwise normal, strong wind currents, *Bayern* at the center of the column reporting difficulty maintaining visual contact on her next ahead and requesting permission to use radar.

Suddenly they were through the cloud blanket and angling in on a landscape all round, verdant hills and broad rivers that twisted together toward a distant sea, over which there were streaks of rain.

"Cities here all right," Yurka said, and pointed to where, under the curiously diffused and shadowless light, like that in an operating room, two of the rivers came together. All the point of land where they joined was covered with what were evidently human structures, and a tracery of bridges ran across the streams to join other collections of buildings.

Lortud turned to the intercom. "Con? Make landing in that hollow at the edge of the smaller stream, just to galactic north of the city. Drop the tail-end ship back for high cover. Others over the city, intervalled out, at eight miles, except *Impero*."

LORTUD turned back to watch the growing city. There were few straight lines in it, either vertical or in the plan of the streets. The annunciator clicked and pronounced, "Laboratory says this planet has a slow rotation and thirty-five hour day, approx."

Lortud clicked an answer. "Very well. Yurka and I will land as before. Have a landing party ready, but you needn't man more than three battle stations. A race with that size and type of permanent structures will be awfully careful about starting anything rough."

The *Massachusetts* began to rock gently. Yurka chuckled. "Our staff captain is no fool," he said. "He's noticed the culture down there, too, and is using his side-blasts, being careful about smashing things below."

"Let's be ready," said Lortud, without answering directly, and led the way to the exit compartment. The detail entered it a moment later; the ship touched ground with a lurch that almost threw them off their feet and caused Lortud to

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say something profane under his breath about being too damn careful of causing damage on landing, and they were lowered to the ground.

As the door opened, a wave of dank heat seemed to flow over them. The brilliant, shadowless light showed they were stepping out into lush grass, some hundred yards from the bank of the river. One of the landing party slapped suddenly at his face, and Lortud turned and grinned. "Don't worry," he said. "The bite won't poison you, or the planet wouldn't be declared habitable."

He led the way through ankle-deep grass that squished under the feet up a slope toward where a row of heavy-leaved trees extended broad arms in a pattern too regular to be the work of nature alone.

"Ouch!" said Yurka, and slapped in turn. "Commodore, these insects may not be poisonous, but I'll take a nice earthly mosquito."

They reached the crest. Behind the lines of trees was a road, or what had been a road, for the surface of compacted crushed stone was mostly worn away, and there were deep ruts with muddy bottoms. Beyond it a once-white building, tumbledown and stained, presented a vacant face, and a small pink animal scuttled away into rank growths.

Lortud gazed around. "Welcome to Kushan," he said. "The committee seems to be delayed. All right, Brashear. You may as well get your men posted along those trees."

Yurka slapped again. "If I were an archaeologist instead of a psychologist," he said, "I think I'd call this an animal-transport road. And I'm not sure I like that any better than the signs of regressive culture on Asmara."

"Phew, it's hot," said Lortud, and turned round to watch the *Impero* settle neatly into her berth beyond their own ship. "Well, if they have animal transport, they have animals, and animals are protein. In fact, there comes one now!"

[*Turn page*]

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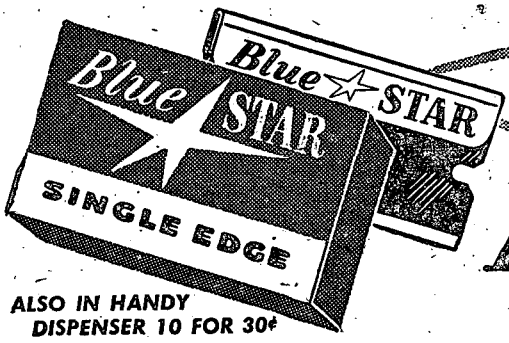

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OVER THE hill from the direction of the city, Yurka saw a large, dun-colored creature approaching at a placid walk, dragging behind it an extraordinary vehicle that looked like a parody of one of the early Earth automobiles found in museums. It ambled slowly toward the three men who stood waiting. Lortud told the talker, "Tell them we have apparent contact."

As it drew nearer, it was evident that the strange vehicle was decorated with streamers in many colors, most of them faded or stained. A man in the front seat of the vehicle controlled the beast by a pair of cords leading to its mouth. He drew up beside the visitors from space, called something to the animal which caused it to stand, and leaped to the ground.

He was small, with a dark skin, and a smile that seemed engraved upon his pleasant face. As soon as he was facing the visitors, he put one hand over his eyes, bowed deeply, and in an accent almost as unintelligible as that of the Kaicones said, "Lords from outer worlds, I am devoured with regrets, but I am required to inform you that this is a semi-closed planet, and we cannot receive your commerce."

Lortud said, "We're not establishing relations. This is a squadron of a United Planets punitive force, a battle squadron. All we want is some water and provisions. I am Commodore Lortud of Earth."

The man bowed again. "And I am your slave, Vijanam Adhel of the Kshastra race of Kushan. Lord, we have utmost reverence for the authorities of the United Planets, and all that we have is yours. Will you do me the pleasure to accompany me before our high citizens that we may the better minister to you?"

The talker said, "Sir."

Lortud turned. "What is it?"

"A message from the *Impero*, sir. They request permission to land. They have several natives outside, making friendly signs."

The brown man bowed again. "Lord," he said, "if you have others of your company, will you honor us by allowing us to provide them with entertainment and food?"

Lortud wrinkled his brow, and said rapidly to the talker, "Permission granted for a party of ten. Join us here, as escort. Remainder of *Impero* crew not to be over five hundred meters from ship."

Vijanam Adhel said, "Warrior-lord, I offer you the apology of Kushan for not attending you with an escort to do you honor and suitable transportation, but this is the hour of our afternoon when all cease from labor to take sweet repose. But if you will indeed accept our hospitality while we discuss the question of how your needs shall be met, I will at once summon cars to spare the weariness of your limbs."

"Okay," said Lortud. "Go ahead."

Vijanam Adhel produced from his shapeless garments something that looked like a diminutive pan-pipe and passed it rapidly across his lips, blowing into it. "Supersonics," said Yurka in a low voice. "Maybe it will be all right after all, even if they're regressive on transportation. We haven't anything like that."

Vijanam Adhel bowed again. "Lord, your permission to sit." Without waiting for it, he squatted cross-legged into the damp, yielding grasses.

Lortud turned. "Brashear!" he shouted. "Get your men together. You can stay outside the ship if you wish, but don't go more than five hundred meters. The Italians are furnishing me an escort to go to town."

V

THE PROCESSION of animal-drawn cars stopped before a building whose door-pillars were elaborately inlaid with a mosaic in bits of colored enamel, many of which had been broken away. Vijanam Adhel climbed out, stood before the door, and whistled. After a minute the door opened slowly on a man who

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moved languidly forward to the beast's head.

"They're as like each other as so many Chinese," said Lortud in a low voice, "and they all seem to be young."

Yurka said, "And I don't like it any better than Asmara. Commodore, there's something wrong. Have you noticed that everything is dirty or run down. Watch your step."

"For what?" said Lortud, but before the psychological officer could answer, their guide was bowing them into the building which was evidently the Kushanian idea of a palace. They were led through an oval entrance hall with a tesselated floor, through another small room and found themselves in a big round room with tall windows through which the calm light of Kushan drifted.

Around the walls were piles of cushions, on which were reclining a group of men very much like Vijanam Adhel in appearance. They smiled amiably at the Earthmen, but hardly moved except to take from the low tables before them pieces of bright-colored fruit or tall glasses of some kind of wine.

Vijanam Adhel led Lortud and Yurka across the circle toward a fat man with a little whisk broom of feathers in his headcloth, placed one hand before his face and said that this was the Most Exalted Kshaster of the city of Chandarabad. Lortud brought forward the Italians and introduced them — Captain Cavagnaro, Dr. Antoniotti, Commander Bellino, and the rest.

The Most Exalted Kshaster said, "It has reached my ears that you are warrior-lords from the mother-planet, in need of certain things that we are only too happy to supply. But it is our well-established custom that during the hours of afternoon we take our ease among the delights of our fruit and wine, the better to meet later cares. We pray you to join us in this relaxation."

He waved a languid hand. The visitors, following his motion with their eyes, saw that new piles of cushions had been placed and servants were putting before them low tables, with plates of colored fruits and flagons of wine, like those before the others in the room. Lortud said, "We thank you. We are anxious to return to our home, but I suppose an hour or so won't hurt us."

He led the way toward one of the piles of cushions. The enervating moist heat made the rest seem good. Lortud leaned toward Yurka and said, "There isn't a woman in the place."

"That's all right," said the psychological officer. "This is an Indian colony and they probably have the ancient purdah."

The Kshaster leaned a little toward them. "Lords," he said, "it is decorous and delightful to observe the ceremony of the fruit." He selected a pastel green fruit, picked up a glass-bladed knife, cut out a section and placed it on his tongue; then he took a mouthful of wine and began to chew. A beatific expression spread across the Kshaster's face; his eyes almost closed, and the visitors were aware of a pungent, lightly spicy odor which seemed to come from neither fruit nor wine, but the combination of the two.

As the visitors addressed themselves to similar fruits, Yurka said, "Commodore. Something."

"What is it?"

"How did this bird know where we were from and what we wanted? That guide has been with us all the time, and we've just been introduced."

Lortud frowned. "I think it must be that super-sonic whistle, not mind reading or anything of that kind. I wish we knew how to operate those things."

He placed his segment of fruit on his tongue, and was just about to pick up the glass of wine when there was a shout of "No!" from the cushions on his right. He turned to see Dr. Antoniotti of the Italian ship spit violently, then cut another piece of fruit and crush it into the wineglass.

"What's the matter?" asked Lortud.

"Don't touch it," said the Doctor. "It's doped." He took three quick steps to-

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ward Lortud and held the wineglass out. "Smell that!"

"Smells rather pleasant. What is it?"

"I wouldn't know everything that's in it, but there's a high concentration of narceine for one thing. Habit-forming and fairly deadly narcotic alkaloid. Good God, look at the Captain!"

Cavagnaro had evidently finished his dosage of the combination. He lay back among the cushions, a foolish smile of pleasure spreading across his countenance. Beside him, Commander Bellino was sitting upright, but with his mouth open and eyes staring at vacancy. Another of the officers was wagging his head back and forth with the slow beat of a metronome.

"So that's it!" said Lortud. He turned fiercely on the Kshaster, hand on his pistol-butt. "You'd better explain why you're doping us and make it good and make it fast." He swung to the talker: "Repeat everything to the ship. No. 1 readiness."

The fat man merely lolled among his cushions, eyes narrowed to slits; his voice came slowly and as though from far away. "Lord, we are but sharing with you the highest of our pleasures. Come rest awhile from every care."

"He's right," said Yurka. "They think they're doing us a favor by letting us in on this mass sleigh-ride." He shuddered. "Now I know what's wrong with this place. It's become a planet of drug addicts!"

Dr. Antoniotti said, "It must be the combination of the 'wine' with the fruit that releases the narceine. Wonder how they hit on it?"

"I don't know, and I don't care," said Lortud. "Let's get out of here. Talker, ask the ship to break out a helicopter lift and coach it in at the door of this place."

He stood up in a single lithe motion and stepped over to the stricken captain of the Italian ship, who tried to beat him off with feeble hands, still smiling foolishly. Yurka managed to get one of the drugged officers into movement, Antoniotti took another.

Vijanam Adhel was wringing his hands and weeping. "Lords, lords, I implore you to visit your hardest punishments on my unworthy head. I am only a messenger, but I assure you that the Kshastra will do anything you desire to recover their place in the affections of the parent race." Lortud growled.

BACK ABOARD the *Massachusetts*, the conference of captains on mutual visual was serious. The status reports showed that practically every ship would have a protein deficiency for any voyage that would take over eight weeks on super-speed.

"That gives us approximately a four-week trip without cutting the reserves down so far that we'd have to drift and ask for a relief supply ship," said Lortud. "I don't imagine any of you want that."

No one felt the need of answering; the last squadron that went into drift was Sorenson's of Punitive 7, and all knew too well that every officer in it down to the rank of major had been broken.

"All right, then," Lortud continued. "I just wanted to be sure that none of you would turn in a protest report on me for not doing it. Now, we'll consider the other possible plans. Captain Westmorland has suggested that we put out landing parties on some of the less civilized parts of Kushan—if any part of it can really be called civilized — and take some of the local animals by old-fashioned hunting methods. The plan has a certain attractiveness, but it is open to the objection that we might not get enough proteins to pay for our time."

The panel below the pictured face of Westmorland of the *Triumph* clicked to show that he wished to speak. "I don't agree," he said. "With modern weapons —"

Lortud clicked back at him. "There's a more serious objection still," he said. "Dr. Antoniotti of the *Impero* took some of the fruits aboard and analyzed them.

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He reports their chemistry is such that not only narceine but various other alkaloid narcotics form very readily on contact with liquids containing even small quantities of acids. Now there are small amounts of acid in most animals bodies. That is, any meat we obtained on Kushan would be apt to be doped. If we had all the time in the world, we could search around until we got hold of something drug-free. But time is precisely what we lack. I have therefore decided that we should travel farther."

Westmorland's panel clicked again. "I withdraw my objection," he said.

"Good," said Lortud. "The next question is what direction we shall take. Unfortunately, stars with viable planets are comparatively rare in this region. However, Commander Hondschoote of the *Dent Ardent* has proposed an ingenious solution for our difficulties. He suggests that we make for 221 Serpens, H.D. 87433, which has a planet named Hauraki that is a member of the United Planets organization."

Captain Viollet of the *Gloire* clicked. "What kind of colony is it?" he asked. "We don't want to risk another one where they don't eat proteins."

"It's a secondary colony," explained Lortud. "The original Earth stock came from New Zealand and settled on Roha, in the 21 Ophiucus system. Hauraki was colonized by a group of scientists who didn't want to be bothered with social problems or the arts."

"Just a minute." It was old Captain Salazar of the *Aquidaban,* so famous throughout the fleet for his memory that he was called "The Storage Bank." "As I remember it, Hauraki is nearly seven weeks from here on super-speed, and it's in the wrong direction to take us home."

Lortud smiled. "Right. That's the ingenioüsness of Commander Hondschoote's plan. If you will look up your star catalog, you will find that a little less than halfway to Hauraki, there's a planet attached to a sun numbered as H.D. 92111, G-type star. It's a red dot planet, that is, with non-humanoid inhabitants, but it is listed as having great quantities of animal life. We can stop there; if we get what we want, the stop at Hauraki need only be a friendly visit, and if we don't, we can at least drift near Hauraki."

The row of pictured faces on the panel showed expressions indicating both that the idea was new and that no one could think of any objection precise enough to be put in words. Lortud gave them a minute or two, then:

"Very well. My decision is that we will pass into super-speed for H.D. 92111 at 1030 71ZX galactic time. Have your navigators chart courses on that basis and report them in for master-computation. That will give us a sixteen-hour period in which to discover any objections to the plan and at the same time allow us to start the jump during a morning watch, when it will be more convenient. Conference closes."

He snapped off the communicator. "I don't think there'll be any real objection," said Captain Pelham, and turned toward the door, when Yurka saluted formally. "What is it?"

"Sir, I wish to make a confidential report."

"Oh, Lord. I was hoping we wouldn't have to have one of those on this trip. All right, come along."

PELHAM led the way to the Captain's cabin, said, "Conference; Commander Keller to take command of the ship until relieved," into the intercom, switched off exterior communication, switched on the recording device and turned to the psychological officer, who had remained stiffly at attention. "Go ahead, Yurka, who's behaving irrationally now?"

Yurka ran the tip of his tongue around his lips. "Sir, I'm afraid it's Commodore Lortud."

"Lortud! Are you sure you don't need a treatment yourself? What's your evidence?"

"The manner in which he has been

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conducting this search for food and water. We could have hunted for proteins at Asmara, but he didn't think of that until we got to Ksuhan, where hunting wouldn't do us any—"

"Just a minute," said Pelham. "Neither Westmorland nor anyone else made any such suggestion at Asmara. Those people have aircraft, thermite guns and rocket-bullets and were determined not to let us have anything that came from their planet. To have gone any farther there would have involved us in military operations against an independent culture, which is strictly contrary to interplanetary law. You know that as well as I do."

"Yes, Captain. It isn't any one incident, but the continuing pattern we have to deal with in space psychology. And I'm not suggesting that his spot command judgment has been affected. It's the overall planning."

Pelham touched his moustache. "Go on. Where's your pattern?"

"He was very anxious to get from Asmara to Kushan, which didn't bring us any nearer home. Now he's just as anxious to get away from Kushan in a direction that will take us right away from Earth, and with a stopover at a planet whose characteristics are altogether uncertain."

"But that wasn't his plan; it came from Commander Hondschoote on the *Dent Ardent*."

"He accepted it at once."

Pelham brought down a hand. "Look here, are you suggesting that the Commodore doesn't want to get home soon? Because if you are, I'd say you were irrational instead of him. There isn't a man in the squadron who has more reason to get back quick, or who has shown more anxiety to do so. We were talking about it just the other day."

"That can be explained psychologically. He has every desire to get back, but at the same time he's dealing with an overwhelming subconscious compulsion against it, trying to fight off the compulsion. That's the reason for the difference between his words and actions. It might even be an induced compulsion, something that went wrong with his conditioning. I've heard of such cases."

There was a moment's silence as Pelham considered. Then he shook his head slowly. "No, Yurka, I won't buy it. In the first place the idea came from Hondschoote. He's the best navigator in the squadron, and if there were any planet more directly on the route to Earth that we could reach with the supplies we have left, he'd know about it. In the second place, you were monitoring that conference yourself, and you saw that none of the captains objected to the plan or even made counter-suggestions. Your theory requires that not only Lortud should be subject to this compulsion against getting home soon, but all the captains in the fleet. Including myself." He smiled. "If that's irrational, I say let's all be bugs together."

VI

"IT MIGHT be the old Earth," mused Yurka, looking down from at the smooth range of green valley flanked by tall, cliff-sided hills, along which they were flying at some 3,000 meters.

"The Earth as it will be when it gets a couple hundred thousand years older and hasn't as many oceans," amended Lortud. "No, that isn't right, either. There doesn't seem to be any general lack of water. That vegetation down there is green as it can be, and there are certainly streams. It's just that they're a little short on oceans."

The annunciator buzzed and said, "*Louisiana* to Commodore. We have sighted what is apparently a form of animal life."

Lortud picked up the intercom. "Communications, make a general signal to hover." He changed connections. "Con? Get a big helicopter lift ready, with an armed landing party. I think I'll take Commander Keller with me instead of

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Yurka. Psychology won't be so much use as someone with the technical knowledge in dealing with non-humanoids. You might also signal to the *Miyako* that she has permission to send down a landing party for samples of non-intelligent life, and analyze for protein content. If those Japs can take it, anybody can. They all have delicate stomachs."

He went through the door, buckling on his pistol, and the *Massachusetts* began to bounce slowly, like a languid rubber ball, as the power-units went into the hovering routine. "Also, Lortud has to take command of every landing party in person," murmured Yurka, gazing after him. "I wish I could identify—"

"Beg pardon?" said a major from the engineering division, who had come up on his off-duty period to get a look at new world.

"Nothing." He lifted the long-range glass and pointed it downward. "Look. Those must be the animals the *Louisiana* saw, down there to the left. Certainly look like cows at this distance, but we haven't anything to compare them with for size, not knowing how tall that vegetation is."

The big helicopter swung down and settled silently into grasses whose edges were feathered out like giant millefoil. Lortud snapped open the door and stepped out, almost instantly going hip-deep into the vegetation. "Ground's firm enough," he said, and reached a hand up to help Keller, a big, bushy-browed man, who had minny-gun strapped across his back, while the landing detail climbed out the after door of the machine.

"Testing, testing," said the talker.

"There they are." Keller pointed to where, about three hundred yards away, a row of red-brown backs rose above the greenery in a pattern strangely like that of a herd of grazing cattle. "Say, this air surely has sparkle in it."

"It's the extra oxygen," said Lortud.

[*Turn page*]

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He addressed the detail. "All right, men, spread out in skirmisher formation and guide on me. Those animals are obviously grazers and not any form of intelligent life, and we want one of them. Use bullets, not rocket-shells, unless they try to attack."

As the men spread the *Miyako's* helicopter was visible, drifting in farther down the valley. A flying creature of some kind lifted from the ground, whirled once around it and down again. The pilot of the helicopter leaned out and called, "Shall I keep over you, sir?"

"No," said Lortud, and either the sound of his voice or the movements of the men spreading out in their semicircle seemed to rouse the attention of one of the grazing beasts. It lifted a long, mournful cow-like face and stared at them. There was a single horn, with a curious metallic sheen, in the center of the forehead, and a pair of ears as large as buckets and fantastically involuted.

The creature did not seem particularly disturbed by the sight of the Earthmen, merely swung its head from side to side to gaze at one after another, finally fixing on the helicopter, and opening a wide mouth, emitted a sound like the coo of a gigantic pigeon. It was a little larger than a cow.

"Aim about for the eye," called Lortud. Two of the landing party threw up their weapons almost simultaneously, there were a pair of brief, soundless flashes, and the animal dropped, thrashing. The fall of their companion brought up a whole row of heads which, like the first one, gazed at the circling Earthmen and fixed attention on the helicopter. Then, without any appearance of undue alarm, the herd began moving slowly away, heads bobbing at the ends of rather absurdly thin necks.

"I'd say they were domesticated," said Keller. "Presumably by the non-humanoid inhabitants, whoever they are. But I haven't seen any sign of them."

"That's right," said Lortud, pushing through the rank grasses. "Talker, see if you can get the *Miyako's* helix and ask them whether they have any sign of the inhabitants."

NOT ALL the grasses were alike. Some of them had small flowers of a peculiarly intense blue. "*Miyako* party says no, sir," the talker came back. "But they have encircled several specimens of local animals."

Both shots had struck the creature squarely in the eye, and it was quite thoroughly dead. "Beefsteaks!" said one of the party, and there was a little laugh from the others. Keller bent over to examine it. "I think it is beefsteaks at that," he said. "Look, it has an udder, and I didn't see any young around, so the chances are that the local farmers use milk. No hooves, though, just splay feet. Hmm."

He bent over and tapped the horn, then took out his knife and tapped it again. It gave off a distinct ring.

"Why, it's metal!" he said. "What do you think of that, Commodore?"

Lortud shook his head. "I'm not enough of a biologist to think about it," he said. "If it's good to eat, that's all I ask. Anybody think to bring a protein-testing unit?"

"I did, sir," said the cadet in charge of the landing party, and produced the small box in which foods were chemically sampled.

"All right, take a cut off this animal's rump, and—what is it?"

The talker said, "Sir, the ship reports receiving intense, pulsating radar emanations."

"It does, does it?" said Lortud, turning and gazing around. "Now, where in the blue-belted blazes would they be coming from?" He pointed. "Will you look at that, Keller?"

The group of animals that had been moving slowly away from them had broken into a huge, clumsy gallop through the tall grasses, and were headed toward the cliffs at the far side of the valley, stumpy tails held high. As

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the visitors from Earth watched, a section of what had seemed the stone face of the cliff slid upward to reveal a black opening. Lortud whipped up his folding glasses; so did Keller.

"That cliff face is metal!" he cried. "The whole damned thing's a structure!"

"So it is," said Keller, "and the animals are making for it like billy-o."

"Sir," said the cadet. "There seems to be another one of those doors opening. Farther along, there."

Lortud turned swiftly to the talker. "Tell ship to train on those doorways, load with atomics," he said. "And come down to one thousand. Helicopter, ready to pick us up, emergency. Is anything coming out, Keller?"

"No, they're going in, just like the animals into Noah's ark. There, look; there goes the last one, and the door is starting to come down again."

Lortud lowered his glasses. "Guess they aren't very dangerous after all," he said. "Just wanted to keep their herds away from us, and I can't say I altogether blame them. What do you make of it, Keller?"

"I'd say you were probably right. What interests me is how they called the animals in." He indicated the dead beast with his foot. "You know what I think? I think it's some form of radar. See those ears; they look as though they belonged on overgrown bats. You could receive a lot of radiation with them."

Lortud lifted his glasses and surveyed the cliff again. "I don't see any sign of apparatus," he said. He put one hand to his forehead. "This wants thinking out. I believe you're right about the radar; that must have been what the ship reported. But it can't be very efficient, or they'd have beamed it instead of giving it so wide a spread that the ship picked it up at 3,000 meters."

"Not necessarily," said Keller. "It might—"

"Sssh, you're interrupting my thoughts. Also, pending examination, they have just what we need in the way of proteins. And aside from the fact that it wouldn't be exactly fair to take their property without compensation, it doesn't seem likely that we would get very much of it. Keller, I'm going over there and try to establish relations."

The Commander cleared his throat. "Well? Any objections?"

"Not exactly. But, Commodore, this is a red-dot planet."

"Yes, I know—not suitable for human colonization except under military guard and as ordered. But we're the military. Talker, send this: Commodore to Captain Pelham: Will attempt to make contact with inhabitants of this planet to secure needed food supplies peaceably. Sending you beef carcass. Investigate biological aspects as well as availability for food." He swung round. "Now, you men, this is strictly a volunteer proposition, above and beyond duty. Anybody who wishes can go back to the ship, and I'll skin the man alive who says it isn't an honorable thing to do. Get that helix over here."

IT WAS evidently growing toward late afternoon on planet 2: 92111, with long shadows striking across the valley from tree-covered hills on the side opposite the cliffs. The cadet closed his testing box and said, "The test's negative, sir. No dangerous substances or reactions."

"Good," said Lortud. "Let's go."

He led the way himself, down the slight slope to the bottom where a small stream ran through, and there was swearing and laughter as somebody got a shoeful. The talker said, "*Miyako* reports the beef very edible, sir, and recommends electronic cooking."

"Very well," said Lortud. "Now as we go up this slope toward that door, you'd better expand into skirmisher formation again, flankers well forward to give me close cover from under the edge of the cliff. Keller, suppose you drop off here with the minny-gun for high-angle cover. As soon as that helix gets away from the ship, coach it in for

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overhead cover."

He led the way up the slope, where the grass grew less rankly and had been trodden down by the passage of many animal feet. As one approached the cliff, against which the setting sun now struck almost level, it became apparent that its rock-like appearance was due to a series of tapering corrugations in the dull gray metal of its composition.

Lortud strode up to it, walked along a few steps in either direction and tapped. The only answer was a dull ring of metal. "Report to the ship that there doesn't seem to be any means of entry," he told the talker. "Oh, Keller! Come on up here." He motioned in a couple of the detail as well, and the group contemplated the structure.

"The tops of those corrugations, up there, where they flare out, must be air intakes," said the Commander. "But what beats me is that there doesn't seem to be anything like a window."

"Yes," agreed Lortud, "and the metal's tremendously heavy. The whole thing is built like a fortress. My guess would be that whoever lives in a place like that has some pretty dangerous natural enemies." He turned to the talker. "Tune up your instrument, son. I want them to hear everything we're saying, so that if anything goes wrong, they'll know where to pin the medal."

"Shall I let this door have a blast?" asked Keller.

"Not yet. No use smashing up the furniture until we're sure we can't get in any other way."

He led the way along the top of the slope. The doors seemed to fit so snugly into the surface of the structure that it was impossible to tell where one left off and the other began. The talker said, "Sir, the helicopter lift says that one of the doors is opening, down there ahead."

"Come on!" cried Lortud, and led the group at a run along the line of metal wall. It jutted out in a slight curve. As they came around it, there was the opening, the long evening light striking into a cavernous gap some twenty feet high, with a smooth floor leading downward at a slight angle. Somewhere inside there was a faint luminescence, but not enough to make out any detail, and from somewhere near the luminescence came the exaggerated coo of one of the grazing beasts.

"I guess we go in," said Lortud, and pressed forward.

VII

FOR ABOUT a hundred yards the tunnel led straight on, its floor giving the ring of metal. The light was too faint to make out much detail of what lay beyond, except that the passage seemed to divide around a wedge-like projection, with the right-hand wing wholly dark.

"Look out," said one of the men. "Here they come," and the passage behind was abruptly filled with the splat of the grazing animals' feet and the bubbling coo of their voices, as thirty or forty of them came in. The Earthmen pressed against the wall to let them pass; as each one came abreast of the group, it turned its curious bat-eared head toward them, emitted a coo or two, then pushed on with the rest, taking the left-hand passage. The leaders of the group were hardly well within the cave when, with a heavy clang, the outside door came down, and the Earthmen were in almost complete darkness.

Someone swore. Lortud said, "We're in for it now. Someone, make a light. Talker, can you still get the ship?"

The hand said, "No, sir. The normal channels won't work through all that metal."

"Try the low angstrom bands. As soon as they realize we're out of communication, they'll probably make a set-up in that region, and their excitation will give you power enough to get through an answer. Keller, let's take the turn to the left here. That's where those animals went, and it's them we're

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after. You better drop back and be rear cover with that minny-gun. Levine, you're the point; I'll be right cover and Wallace left, as light-man. I don't think we better do any more talking than necessary."

The luminescence, which came from the center of the ceiling, had a curious fog-like quality that seemed to cut off the beam of Wallace's light a few feet ahead. Beyond its interruption, the left-hand passage curved leftward more sharply still, crossed a metal projection a foot or so from the floor, over which Levine stumbled, and the visitors from Earth found themselves looking at a huge round and domed chamber divided by a partition about shoulder high. On the near side of it the grazing animals were moving slowly about or lying down; from the far side came cooings, and small animals of the same type stuck up heads to contemplate the visitors.

"It's a stockpen," said someone.

Keller suddenly shouted, "Hey!" and they turned to see coming down the passage a creature as strange as a dream. Fully twelve feet the body reared from the floor, carapaced like that of a lobster, and dully shining in Wallace's light. Two pairs of short jointed legs, moving rapidly, gave its progress the appearance of a trot. There were at least four pairs of other appendages, two of them terminating in parodies of fingers, the others in tentacles that were now carrying big metallic hexagonal boxes that looked like containers of some sort. There was a head with two long pairs of antennae in front of cup-like orifices and a long prognathous jaw, but nothing that could be called a face.

"Ugh!" said someone. The creature stopped, waved its antennae toward the little group of men, opened its mouth and uttered a series of sounds not too much unlike the cooing of the grazing beasts.

"It's blind!" said Keller. "It hasn't any eyes."

"But it can hear," said Lortud. He stepped forward, held out a hand in the universal gesture of friendliness, and said, "We come as friends, or as you would perhaps put it, coo, coo, cuddly-coo."

For answer, the creature's head bent forward, both sets of antennae approaching Lortud's head closely and gave a shrill whistle and a series of clicks. Then it dropped one of the metallic boxes and with a tentacled hand explored Lortud's as far up as the cuff of his uniform. This appeared to disconcert it slightly; the tentacles writhed back, the creature said, "Coo, coo, cuddly-coo, tsk, tsk." Then it picked up the box again, and pushed on past the Earthman to the grazing animals.

It placed the box under the udder of one of these, opened it, and began to milk rapidly!

SEEMS friendly enough," observed Lortud, "but he's apparently telling us he has to get his chores done before indulging in a taste for society. What do you make of it, Keller?"

"About the same," said the Commander. "Did you notice the highly developed speech system, though? It made three or four different classes of sounds. And there's a big brain case. And that business with the antennae. It must have a couple of senses we lack to compensate for sight. It would be fascinating to learn something about that lobster's evolutionary history."

"I'll bet I know what one of those senses is," said Lortud. "It must have something to do with radar. Did you notice how all those grazers flocked in, apparently on call? What I don't understand is how something built on the crustacean scheme could grow that big. The internal muscle system wouldn't support a creature of that size on any earth type planet I know."

Keller said, "You don't know all the details. From what I saw of that beef we killed and what I can see of our friend here, I think that shell is metal, and heavy metal, at that. There's a

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different physical chemistry at work here."

Lortud swung to the talker, who was still fiddling with his instrument. "Any luck?"

"No, sir, not yet. There seems to be quite a lot of static on some of the bands, but nothing I can make out."

"Keep at it. Maybe some of the senses they have here are electrical. Hello!"

Down the passage in the pale fluorescence came another of the lobster-men. This one carried a kind of long-handled mallet, whose outer head had a long cutting edge let into it. The creature trotted toward the group of humans, calling "Coo, coo, cuddly-coo," as it came with surprising rapidity.

"Look out!" cried Keller, suddenly, and Lortud whipped out his pistol, but even as he fired, the creature brought his weapon down with a crash on the head of Levine. There was a blast of flame where the rocket struck, the lobster-man staggered but, apparently uninjured, reached two of its hands down to pick up Levine's body.

"Scatter!" shouted Lortud, "and let him have it!"

"Aim for those antennae!" cried Keller.

The landing party spread, ducking to the floor, one even vaulting the partition into the pen that held the calves, and the intolerable crash and flare of rocket-bullets filled the cavern as hit after hit burst against the lobster-creature's carapace. It wove from side to side under impacts that would have smashed in the side of a house, but neithed halted nor went down, and in a moment had disappeared round the turn of the passage.

"My God! My God!" sobbed the cadet. "Poor Levine."

"Shut up," said Lortud, savagely, and as he said it, the faint light from overhead flicked once and went out. "Wallace, can you find that partition wall in the dark?"

"Yes, sir."

"All right, get over it and throw your light on that other beast, the one doing the milking. I want to find out how he's taking it."

There was a sound of scrambling, then the beam of light shot out and searched round the pen that held the larger animals. Except for them it was empty.

"They can move fast," said Lortud. "Anybody else have a light?"

"I have, sir," said a voice.

"All right, throw it on me, and I want you men to rally round, so we won't be separated . . . Now, listen, we're up against a tough proposition here. These lobsters evidently regard us as biological specimens or as some form of beef cattle, the way we took their pets here, and they're so well armored we can't hurt them."

"How about gas?" said someone.

"Not in this confined space. I take it nobody brought masks."

"I have the minny-gun," said Keller.

Lortud said, "I was coming to that. Now we're going down that passage to the entrance and try the minny-gun on it. If that doesn't work, and from the solidity of the metal, I doubt it, our only chance is to wait till they open the place up, and in the meanwhile use the minny-gun on them if they come back. I don't think even they can stand that. Stay together. Wallace, you cover our rear with the light, and give warning if you see one of those damned lobsters approaching. You with the other light, keep your beam ahead of us, and let's go."

THE LITTLE procession moved off with a "Quiet, there," from Lortud as two of the hands started to speak in low voices. When they reached the division of the passages, the Commodore asked, "Think this will give you distance enough to keep out of the explosion, Keller? All right, everybody back in that passage toward the stock pen."

The Commander set his weapon on its tripod, adjusted it as the light was

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thrown on the base of the metal door, lay flat and pulled the trigger. The whole tunnel seemed filled with the flame of praesodexyl and there was a crash that set all the grazing animals cooing. Keller jumped to his feet and rapidly swung the gun down the other passage, while Wallace shot a beam of light along it.

After a minute, Lortud said, "No reaction. I bet it disturbed their slumbers, though, and they'll be a little more careful of how they come in on us next time. All right, let's go see how much damage we did that door. Keller, you better stay here in case."

The base of the door was certainly bulged out a trifle and as Lortud bent to examine the spot, he was aware of a current of air that told there had been a minor penetration, but he shook his head. "Not good enough. We could easily use up all the shells we have for the gun without getting through at this rate, and then we'd be defenseless. Come on."

The talker said, "Sir."

"What is it?"

"I think I'm getting something now, in the low angstrom band." He moved from side to side, then back to where the minny-gun shell had struck again. "I hear it when I'm near this hole. Commodore Lortud here. Come in, *Massachusetts*. . . . They want to know if you're all right, sir."

Lortud barked a grim laugh. "Tell them we're all right for the time being, but I don't know how long we will be. We're locked in here behind this metal door, impenetrable to our weapons. The inhabitants are inimical, nonhumanoid and very dangerous."

The talker spoke into his instrument, listened and said, "They want to know whether they shall use atomics on the door, sir."

"No. We can't get far enough back in to escape the explosion without getting down into the living quarters of these animals, and I don't want to chance it. We'd lose men. No. I don't think I want them to use praesodexyl missiles either. The jar of that little one from the minny-gun was about all we could take in here. . . . Wait a minute, though —talker!"

"Yes, sir."

"I have it. Commodore to Captain Pelham: station three ships at one thousand meters from entrance this cavern. Have helixes in air for emergency rescue. As soon as door begins opening, ships are to commence intense radar and counter-radar emission, pulsating, and on all frequencies, beamed at entrance. Goodbye until morning."

Without waiting for the talker to finish his transmission, he strode back down the passage to where Keller and the rest of the party were waiting.

"I think I've found an out for us," he said, and described his arrangement. "Now let's leave one man here with a light as an outpost and go back to that stock pen and see if we can get some sleep."

OVERHEAD, the pale glow snapped on abruptly, and the grazers in the larger pen began to stir and give their bubbling notes. Lortud snapped up from the floor. "Sleep any, Rolf?" asked one of the hands. "No, but the boss did," said another, and the man on watch came down the passage, saying, "They're coming! Four of them!"

In a low voice, Lortud said, "I want everybody absolutely quiet and down behind this partition. They may not come in here until they're sure their grazers are clear. At least I hope that's how they'll figure it."

The animals began to mill around, then pushing and nudging, shoved toward the passage, and its walls were suddenly streaked with a light which was not that from overhead.

"The door's open!" whispered Keller.

"Give them a minute or two," Lortud whispered back.

From outside there was a high-pitched whistle that rose unbearably until it disappeared above the level of

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audible sound, then a series of metallic clankings, and sharp bleats from the animals.

"Now!" cried Lortud. With Keller at his side, minny-gun at the ready, he vaulted the partition and raced for the exit, followed by the men. Four of the lobster-creatures were there, writhing on the metal floor, their antennae twisting, their limbs jerking, while on the ground lay several of the hammer-axes and some box-like instruments with projecting tubes.

"Don't touch them," said Lortud, and picked his way past into the blessed light of day as one of the helicopter lifts came down. He was the last man aboard. As he looked down from the rising machine, the group of grazers below was visible, cooing and running about, as though in panic. Two or three of them had lain down and were jerking feebly.

"Radar's got them, too," said Lortud. "Talker, contact those other helixes. Tell them to send in landing parties for as many of those animals as they can get. Also contact other ships to do same."

Keller gave an exclamation.

Lortud turned hard eyes toward him. "You don't think I'm going to get out of this place without our beef supply, do you?" he asked.

VIII

"SOUTHERN CROSS is the last one," said Captain Pelham.

"That's good," said Lortud. "This seems to be about the last herd in this valley, and I haven't any special desire to try some other place. We might run into the natural enemies of those lobster-beasts, and if they're rough enough to be dangerous to them, I don't think I'd care for the acquaintance."

"Door opening down there, sir," said the lieutenant on duty at the periscope plates.

Lortud grabbed the intercom. "Communications? Commodore to *Louisiana:* Join other ships in producing radar emanations against opening door as cover for *Southern Cross.*"

"Something coming out, sir."

"What? Let me see."

In one stride Lortud was beside the plate in time to see a long metallic nose built up of face-cut angles slowly emerge from the door in the cliff. For a moment it seemed to hang without any visible means of support. Then, trailing a streak of blue fire, it dashed for the low-hanging *Southern Cross* at a speed so fantastic the eye could hardly follow it. The watchers saw the projectile strike; at the same moment there was a blaze of flame as the big ship's return fire struck the mouth of the cave.

Another door began to open, but was instantly blasted by the *Impero.* The watchers at the plates saw the *Southern Cross'* landing party racing for their helix, and a line of explosions blossom along the face of the artificial cliff as the other covering vessels anticipated trouble.

"Signal to all ships," said Lortud. "As soon as *Southern Cross* has recovered her helicopter lift, go up to fifty miles."

"Shall I open fire?" asked Pelham.

"No. There's enough power down there to keep those horrors busy, and I don't want their fire-control confused. There goes the helix."

On the plates they could see the *Southern Cross* swing to recover her machine, the compartment yawning open. Above and to the right of it a hole with jagged edges of torn metal showed where she had been hit.

"That looks like a bad one," said Pelham.

Lortud was already asking communications to get a connection with the damaged ship on visual, and seconds later her captain's face swam and settled into the plate.

"Are you badly hurt?" said the Commodore.

"Yes and no," said the Captain, turned his head a minute to say, "Take her up," and then, "The projectile was nonexplo-

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sive, but it had so much hardness and velocity that it went right through our armor into the spin-room. We have six dead and four injured. The air cutoffs functioned in the damaged compartments and we're space-worthy all right, but I'm afraid the super-speed drive is pretty much of a wreck, and I don't know whether it can be repaired or not. I've got my engineers looking it over now."

"I'll have the *Gloire* send you over a working party. She has some special equipment and technicians."

Lortud cut the connection and turned to the Captain. "Dammit!" he said. "That's about as awkward as it could be. We can't very well leave her behind on a planet like this for a relief-ship. I suppose I could distribute her people among the others if that drive can't be repaired. I believe that's allowable in emergency, even if it does involve a mixture of nationalities."

Yurka said, "I don't think that will do, Commodore. All the ships have full complements, and the addition of the *Southern Cross'* people would produce crowding all along the line, even if they were split eleven ways. We're so far out that we have a long trip at super-speed ahead of us, and nothing could be psychologically worse than crowding."

"I suppose you're right. What else can we do, though? There isn't another planet in this system that's really habitable."

Captain Pelham spoke reflectively, "When I was a cadet on the old *Baltimore*, we made a training run out to the moons of Jupiter in company with the *St. Louis*. She had a bad premature and burned out her main drive. But old Captain Beynon maneuvered alongside her, welded the two ships together along the exterior stress compartments, and brought both in together. I wonder if we couldn't do something like that."

Lortud said, "That was only on rockets, though, wasn't it?"

"Yes, but the *Gloire* has plenty of power."

[*Turn page*]

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"I wasn't thinking of that but of the connections. You know stresses build up cumulatively in an irregular object at super-speed, and I'm afraid the welds would give and leave the *Southern Cross* out there in nonexistence."

Pelham pulled his moustache. "That's a factor, all right. We might build a false shell around both of them to make the combination a sphere instead of a dumbbell—no, that wouldn't do, either, it would take too long, and I doubt if we have the material. Wait a minute, I think I see the answer. We were going on to Hauraki if we failed to get what we needed here. It's only a short trip from here on super-speed, and the joint ought to hold up that long. It's a Class A planet, open and colonized by scientists, and they'll certainly be able to give us any repairs the *Southern Cross* may need."

YURKA opened his mouth, then seemed to change his mind and didn't say anything.

Lortud said, "I think you've got something there, Captain. So much so that I'm going right down to engineering and calculate out how much the connection would stand while I'm waiting for the report from those two."

He swung out. As the door closed behind him, Yurka said, "Always has to do everything himself, doesn't he?"

Pelham said, "It's a family trait, I guess. The Lortuds are never afraid to delegate authority, but I never heard of one of them yet who was willing to delegate a job when he could do it himself. Especially when it's a tough job, like this one."

"Uh-huh. Captain, tell me something about this Hauraki place. Is it part of the commercial system?"

"I don't know offhand, but it's easy enough to find out. Is it important?"

"I rather think it is. If a theory I'm just beginning to play with is correct, it should turn out that Hauraki is not in the commercial system, although it's part of the political one and even may have a seat on the Council for this galactic region."

TEN HOURS later by galactic time, though twilight was already falling over the green landscape of the rapidly spinning 2: 92111, far below, working parties from several ships were putting the last touches on the joint that held *Gloire* and *Southern Cross* together in one gigantic double sphere, their torches burning bright as miniature stars. Captain Pelham sipped his coffee and said to Keller: "As exec for this ship, I'm supposed to notify and consult with you, but when we reach Hauraki, I want to get the psychological officer over from the *Louisiana* for a visit."

Keller put his own cup down. "Why? What's the matter with Yurka?"

"If I had some wood here, I'd touch it. You know very well that he's pulled up everyone who showed the slightest approach to a breakdown. It's just that he's almost too good, and just before we hit this place, he came to me with a confidential report."

Keller said, "I wasn't informed."

"I know. It was on an officer."

The exec's expression became a frown. "I see—or rather, I don't."

"And this morning, as soon as he heard of Hauraki, he predicted that although it's part of the United Planets organization, it would turn out to be outside the commercial system. He was perfectly right."

"Did he give the basis of his prediction?"

"He said a theory of his required it."

Keller thought for a moment. Then, "Paul, this is pretty tenuous, you know. Just what are you driving at?"

"I wish I knew. It's just a kind of suspicion. But Yurka's such a very sharp psychologist that he could handle any one of us about as he pleased, and being in the line he is, he hasn't been conditioned like the rest of us. And the development corporations would do practically anything to hang something on the Commodore . . ."

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"So you want an independent check on Yurka by another psychologist, who also hasn't been conditioned. Okay. But it will have to be done carefully. Let's see; even if they finish that job of tying the two ships togther tonight, we won't be going into super-speed before morning. Let's ask permission for an officers' party with the *Louisiana* crowd. During the festivities I'll make an opportunity to speak to Burke. He was in the class just behind me."

Pelham said, "That seems about as good as anything, I guess." He picked up the intercom.

THE LANDING platform at Hauraki was not a flat surface of concrete, scarred with takeoff blasts, like those on Earth, but a long, deep trough of some black material filled with bright spicules. As Lortud led the group out of the exit compartment there was a sound of machinery, a section of the black material swung back on a brightly lighted passage, from which emerged a train of pressure cars driven by a girl. Her hair was loose and stringy and her clothes looked as though they had been thrown at her and stuck where they hit.

Lortud stepped forward and saluted formally. "Commodore Lortud," he said. "Permission to land on your planet, and a request for repairs."

"Laboratory Technician Smit," she replied. "This is an open planet, and you have already received our permission while in the atmosphere. Don't waste words. What is the nature of the repairs desired?"

"One of our ships lost its spin-room as the result of enemy action and is only able to go into super-speed for brief periods while attached to another ship."

"We can supply you with a new spin-room. That much is permitted."

"I think most of my crews would like a shot at a recreation area while the repairs are being made."

"Why? Haven't they been properly conditioned?" Laboratory Technician Smit's face suddenly relaxed into a smile. "But very well. I'll arrange it, though I won't guarantee how much you Earth people will enjoy the forms of recreation we have on Hauraki. We tend to be what you would call intellectual."

She touched an instrument by her side on the seat, spoke briefly into it in some kind of code, and said, "I have arranged matters. Will you take your place in the car, please, and come to the engineering center? Dr. Bradlet has expressed a desire to meet you. You will not need your communications man; we can handle such details, and I will have a driver pick up the rest and take them to the recreation center."

"I'd like it if Captain Pelham and Commander Yurka could accompany me."

"The invitation was for you alone. Will you get in, please?"

"Go ahead, Commodore," said Pelham, as Lortud's black brows contracted. The girl cut out all but the first car with the throw of a lever, reversed neatly and waited till Lortud got in, not saying anything. As they slid smoothly away into the tunnel, the Captain said, "Courteous lot, aren't they?"

Yurka said, "It's less like discourtesy than an effort to establish dominance. I wonder . . ."

The car Lortud and the girl were in spun smoothly along, plunged out into bright daylight along a road made of the same material as the cradles which had taken the space-ships. Tall trees grew on either side. The car speeded up, turned right, and after another short run, halted before a low building with a wide-spreading roof, surrounded by flower beds. A tall, but slightly stoop-shouldered man with white hair was busy at a reading spool on a chair under the overhang.

As he heard the feet on the pavement, he glanced up, then stood up, with a look at an instrument on his wrist. "Miss Smit," he said, "you are two minutes and fifteen seconds behind your time of arrival. I presume this is Com-

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modore Lortud." He extended a hand. "Will you sit down and indulge in an alcoholic beverage?"

"Thank you," said Lortud.

"We live very simply here," said the tall man, and stepped to the wall of the building, where he pressed two or three in a series of buttons. "I think you may as well continue that volumetric analysis, Miss Smit."

He sat down again. "I suppose you must be one of the younger Lortuds," he said. "I had a good deal to do with your father at one time, because of our mutual interest in excluding the development corporations—he from the E Centauri mines, and we from Hauraki itself."

There was a whirr and click, a door opened and two tall drinks appeared on a little shelf. Dr. Bradlet handed one to Lortud and took the other himself.

"I'm Alstair Lortud," said the Commodore.

Dr. Bradlet frowned as he sipped. "Alstair? I don't remember—wasn't your father's name Sigus?"

"No. In fact, that was my great-grandfather. Do you remember him?"

"Oh, dear," said the Haurakian. "I beg your pardon, I'm sure. We live so withdrawn here that I tend to forget that our scientific development has surpassed that of the older worlds. In some respects, that is, only in some respects. Yes, it was your great-grandfather I knew, about a hundred and fifty years ago by galactic time."

"The hell you say!" said Lortud. "Have you found out how to live that long?"

Dr. Bradlet smiled. "I myself am two hundred thirty-four," he said.

"But why not let the rest of the worlds in on the secret?"

"Because their psychic development is not yet adequate to support it. Or for that matter some of the other things we have developed. That was why we were anxious to keep the corporations out—a question to which we found the answer by refusing to join the commercial system. If it were not for Sigus Lortud's advice and help, however, I fear we might not have succeeded in our policy of withdrawal, so you see we owe a debt of gratitude to your family. Dear, dear, that was a long time ago. I suppose that the issue is completely settled by this time."

Lortud frowned. "Frankly, it isn't. Not at all. In fact, I don't know whether I'll have any interest left in the E Centauri mines when I get back. I've been away on this expedition quite a while, and the Anthony group are perfectly capable of euchring me out of my holdings during the interval."

"You don't say! I had no idea that this order of problem was still abroad. Dear, dear, another example of our isolation. What ground are they apt to adopt?"

"Oh, I don't know. One of several. Our Council is very strong on capable management these days, and the Anthony group could ask to take over on the grounds of my long absence, for one thing."

Dr. Bradlet sat up in his chair. "But my dear man! I can help you there, and I'll be only too glad to do it, in memory of the help Sigus Lortud gave me."

"How do you mean?"

"Of course, you're not aware of the MacGilvray alterant? No, I thought not; we haven't released it generally as yet. Added to your fuel, it will increase the power of your super-speed drive ninety or a hundredfold. I shall be very happy to authorize a supply for you, and get you home in, literally, less time than it takes to tell it." He touched a stud on the arm of the chair, and like Miss Smit, spoke a few words in code, then smiled at Lortud.

"There. A handling machine is already installing a new spinroom in your damaged ship, and by the time the work is finished the fuel alterant will also be in. Now, let us relax a little before having something to eat. Do you care for music, or would you prefer philosophical speculation?"

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IX

"I WAS just up to see Eschelman," said Keller. "He's nearly going bats, with a Heisenberg factor to figure in on this new stuff along with everything else."

"Sit down," said Pelham. "That isn't all, either, you know. It tends to exhaust the air in the ship, as I understand it from Lortud, and a factor has to be introduced for that, too. So much speech, so much air left. Still, if it will get us home quickly, I'm all for it."

"So's the Commodore. He's all for making the maximum speed and to hell with the expenses."

"Well, you can't exactly blame him. At least, I don't. These Haurakians are hospitable enough, but I can't say I care for their ideas of amusement. A couple of hours in front of a machine trying to figure out answers to philosophical questions from the data about an imaginary cosmos is hardly my idea of a good time."

Keller laughed. "Yurka was fascinated, though. You weren't in the same room with him, were you? He drew one of the mathematical machines first, and it stumped him completely. Then the attendant shifted him over to philosophy and he began to perk up. The first thing he tried was giving deliberately wrong answers in order to figure out the psychology of the machine, but the machine was too fast for him, and shifted the questions so he didn't know whether he was getting the answers right or not. He says we needn't ever worry about these Haurakians; they're too interested in purely speculative matters ever to care about using their stuff to dominate other peoples."

"I'm glad of that," said the Captain. "They could certainly take us apart if they wanted to." He was silent for a moment. "Yurka's probably right. He's very acute."

Keller said, "Has he said anything further about that matter you mentioned—the confidential report?"

Pelham shook his head. "Not a word. I gathered the impression that he was waiting for something definite to happen."

"So did Burke," said Keller. "And that's rather strange, too. Paul, psychological officers just don't wait for someone to blow up one of the rocket ammunition chambers; that's what they're here to prevent."

"Yet you say Burke described him as perfectly normal."

"As far as he could tell on such restricted observation. These fellows always have a hedge of some kind like that when you try to pin them down."

Pelham caressed his moustache. "I wonder. . . . I'll tell you this much. From the nature of Yurka's report, he seemed more worried over a long-range danger as the result of psychological maladjustment than anything that might happen immediately. It could be that since we arrived here on Hauraki, he's found out something that changed his mind. He hasn't said another word about it."

"I guess that's all for the present, then, said Keller and picked up his cap. "Going ashore, Captain?"

"I don't think so. I've seen about all the parks I want to see for the present, and this amusement of matching your wits against a machine that's built to beat you doesn't have much appeal. The last time Miss Okly told me my reactions indicated I needed to develop philosophical calm, and that our habit of using traditional Earthnames was a barbarous survival. What the hell did she think they conditioned us as fighting men for?"

COMMODORE LORTUD stood in the con of the *Massachusetts* beside his hammock and said, "I have asked for this all-ships visual hookup for a specific purpose. This new alterant in the superspeed fuel chambers promises to get us to the region of home in ten days' run, but it introduces certain special problems and dangers, and I want all you captains to understand them."

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He glanced along the line of eleven pictured faces, and as there was no reply, went on:

"By the use of this alterant, we should emerge from the McGilvray super-speed close to our home solar system, but somewhere outside the orbit of Pluto. The calculations cannot be made sufficiently fine to enable us to come out of super-speed within the system without running the danger of striking some planet or satellite on emerging.

"I have accordingly accepted only enough of the McGilvray alterant to take us to that point. With the linkages that have been set up, we should emerge from McGilvray speed at half-second intervals and in single-line formation, as we are now. I have no reason to anticipate any difficulty, but if a gap should appear anywhere in the formation, I want the remaining ships to proceed on normal super-speed from the region outside Pluto to the region of the Earth without further orders. Then complete the journey on rockets as usual. Is this order accepted and recorded aboard all ships?"

One by one the ships acknowledged and reported ready. "All right," said Lortud. "Six minutes from now, then. At 0950."

He turned and climbed into his hammock, while the con talker took up the familiar chant, calling off the minutes and seconds remaining before the ship took her plunge into the grey void of nothingness.

". . . three seconds, two seconds, one second—"

Crash!

The last fleeting thought that came to most of those aboard before the blackout was that this was something new in the line of super-speed all right.

Captain Pelham regained consciousness to find Lortud and one of the lieutenants at the board, while a husky hand was letting down pressures and folding hammocks. He released his own bindings and stood up, feeling strangely groggy.

"Must be getting old," he remarked. "Didn't used to do that to me. Are we in it?"

Lortud had the intercom. "Navigation? . . . Guess there's nobody conscious in there yet." He spoke over his shoulder to the Captain, "Look at the screens."

Pelham took one step and stared. "Why, we aren't in super-speed at all! Those are stars!"

"So they are. And if you'll look at this screen, you'll see that the other ships are here, too, though from the angle you can't tell whether they all came through. Communications? . . . Nobody there, either. Now take a look at the chronometer, Captain."

Pelham glanced, and his face expressed the fact that he had received the second shock of the occasion. "04 ZY," he said. "Why I've been out for nearly eleven days! No wonder I felt punk."

"So have all of us. We must have dropped through from this McGilvray super-speed simply because the fuel ran out. There was no one to operate the controls manually. I'm glad I didn't have all the tanks loaded with that damned stuff or we'd be going yet."

Men were coming to everywhere now, around the con, picking up the hammocks with rapid, practised hands. The annunciator buzzed and said, "Navigation, Holmgren speaking. Somebody has an automatic on us. Please come in on intercom."

Lortud picked up the instrument. "Navigation, this is Lortud. We appear to have gone through our super-speed period unconscious and I want to be sure of our position. As near as I can make out visually, we're oribiting around the sun in line ahead, and there's a planet inside us in the five o'clock 97 arc. I think it's Pluto, but please identify."

The talker said, "Communications calling, sir. Major Purdy."

Lortud changed the connections. "Purdy, Lortud speaking. Get any other

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ship you can reach and check whether they've been blacked out all through the super-speed period, too. Hello, Yurka."

The Commander grinned. "Hello, Commodore. That was like being hit with a hammer."

"Yes, I'm glad we don't have to use that stuff often. Captain, look at this. Are you satisfied with the appearance of that group of stars?"

Pelham stepped to the plate and glanced. "No, I'm not. That has every appearance of a cluster, and it's far too near."

"I thought the same." Lortud frowned.

The talker said, "Sir, Navigation says the planet is not Pluto and it's too small to be Neptune. They're checking."

"Tell them to take a bearing on that cluster, too."

Pelham said, "I take it you're worried over the idea that this patent fuel may have blown us into some region of the galaxy we don't know anything about."

"You're damned right I am! With nobody conscious to take us down out of this new super-speed at the right time, hell only knows where we are."

THERE was a momentary silence in the con, punctuated by a few indrawn breaths. The talker said calmly, "Sir, Communications has the *Dent Ardent*. They report that they have all been out for 10.46 days, and that we are not in the home solar system."

Lortud seized the intercom. "Navigation? Hello, Eschelman. Hondschoote beat you to the punch again. He says we're not in the home solar system . . . Oh, you did know it, did you?" He listened for a moment, then put down the instrument and turned a dazed face toward Pelham. "He's pretty sure that we're at the outer edge of the Hauraki system."

Pelham said, "Then we've spent nearly eleven days of unconsciousness covering a distance that ought not to have taken us more than a few minutes at this super-super speed."

"Or else we've been involved in some damned phenomenon of space curvature. I ought to have Eschelman's stripes for this."

Pelham said, "I don't think so, Commodore. He was dealing with several factors he hadn't been trained in, and which our computers perhaps couldn't handle. I used to be a pretty good navigator myself, and I couldn't find anything wrong with his figures. Besides, they checked pretty closely with those from the other ships. You'd have to break all the navigators in the squadron."

"I suppose so. Well, what's the next step? The only thing I can see is plot a course for home at normal super-speed, without trying to use this trick fuel." He turned to face the lieutenant who had come in with a salute. "What is it, Hassinger?"

"Sir, you requested to be informed at once if our supplies became low for any operation. After we came out of this super-speed I examined the air tanks. We have only enough for three weeks' run at super-speed."

Pelham whistled softly. "And we're at least eighteen weeks from Earth on normal super-speed," he said.

Lortud looked at Hassinger as though he meant to bite him in two, but when he spoke it was mildly enough. "Check with the other ships and see if they show a similar status on air supply," he said. "I suppose there's no chance of reconversion?"

"I've allowed for that, sir. You see, we lose a small amount every time we operate the sub-nuclears, and another small amount every time we jettison inconvertible waste."

"Very well." Lortud's voice was almost a snarl, as he turned to Pelham. "I hate it like hell, but I guess there's nothing left to do but go back there and ask the Haurakians to bail us out. Talker, call Navigation. Tell them when they have checked this as the Hauraki system, I want them to set up a course for Hauraki itself, on rockets."

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He stood silent for a moment, watching the plates glumly. The intercom buzzed; he said, "Lortud" into it, then: "No, I'll come up there," and swung to Pelham. "There's a message of some sort coming through from that scientific madhouse. I'm going up to Communications."

HE STRODE out. Pelham turned to Yurka. "I don't blame him for being a little— What are you grinning for?"

"Because this is just what I expected. My theory required it."

Up in Communications, Major Purdy was explaining, "They're using a long-range excitation beam and Universal code. It's too far to pick up on voice. I've already identified ourselves. Here it comes."

He bent over the chattering machine and ripped off the blue sheet. It read:

WHY HAVE YOU RETURNED TO OUR SYSTEM? REQUEST YOU WITHDRAW WAR VESSELS AT ONCE.

"Nice about it, aren't they?" said Lortud. "Tell them: Return due to technical error in handling your new fuel. Request permission to land for emergency supply of air."

The machine clicked off the message. One of the hands said, "Sir, the *Triumph* is calling, and wants to know if their observation showing us in the Hauraki system is correct."

"Tell them that if it isn't there's something wrong with their instruments. What are we getting now?"

The printer set down: HAURAKI COUNCIL REJECTS FURTHER CONTACT. YOUR CULTURE LEVEL TOO LOW ON EVIDENCE OF YOUR PERFORMANCE WITH OUR PHILOSOPHICAL MACHINES AND FAILURE TO HANDLE MCGILVRAY FUEL. REQUEST YOU WITHDRAW AT ONCE.

"Why, they can't get away with that!" exclaimed Purdy. "It's contrary to the U.P. convention. We're an official squadron in distress and they're an open planet."

"I'm afraid getting away with it is precisely what they can do," said Lortud. They're not under the commercial convention, and they've fulfilled their duties under the political convention by giving us even more than we asked for when we were there. However, let's make one more try. Send them this: We have only three weeks' supply of air, insufficient to reach home."

Purdy fed the message into the machine, then said, "Couldn't we just run a fast approach into their atmosphere and take in the air we want?"

"There's nothing I'd like better. Those high-hat academicians make me want to use boiling oil, even the mild form you find back on Earth. But it won't do. If they're good enough to have that McGilvray fuel alterant, you can take it that they've got enough other inventions to make their damned ejection order stick."

The machine began again: THREE WEEKS MORE THAN AMPLE TO TAKE YOU TO CALLA OR URANIA, OPEN PLANETS OF YOUR CULTURE LEVEL. BOTH IN SAME SYSTEM, STAR H. D. 87987. COORDINATES FOR REACHING IT FROM YOUR PRESENT POSITION AS FOLLOWS . .

"I guess that's that," said Lortud, and as the machine reeled off the calculated course, picked up the intercom. "Navigation? Take a look at the star catalog, will you, and tell me about Calla and Urania, both of them planets of H. D. 87987. I'll wait."

Purdy said, "I thought the old chap down there on Hauraki was so friendly to you."

"You'd be friendly to a dog, too, but you wouldn't let him sleep in your bed." He held up a hand, then put down the intercom. "Urania's a green-sky planet, and a theosophical religious colony at that. I guess we go to Calla. It's a Californian foundation, but at least that's American."

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X

THE DOOR of the landing compartment opened, and Lortud, flanked by Pelham, Yurka and the escort that had been requested as they came down through the atmosphere, stepped out on the landing platform. Two shapely drum-majorettes flung batons aloft into the calm twilight. The band burst into the exciting strains of the "March of the Planets," and two files of gorgeously uniformed soldiers marched forward to rank themselves on either side of the visitors from Earth.

Ahead, in letters of fire that seemed to paint themselves across the sky appeared the words WELCOME to MENDOTA—Calla's Loveliest City. Beneath them tall trees waved to the slightest of breezes, still green in the falling light, and there was a shimmer of water visible, illuminated like the trunks of the trees, from some unknown source. Gondolas glided on the water, each with its own subdued light.

"What did you bring the speaker for?" said Pelham, putting his face close to Yurka to make himself heard over the racket of the band.

"Because the Commodore came without his talker," said Yurka.

The band finished with the "March of the Planets" and the drums gave a couple of tentative taps. "But he doesn't need communication with the ship for a reception like this," said Pelham.

"No?" said Yurka, as the band went off into "The Bird Dance," and Pelham saw his face was grave.

Ahead, the band split apart, a whistle shrilled above the music, and the soldiers faced inwards with grounded arms. Through the lane left by the band advanced a woman who seemed to have stars in the long dark hair that fell to her shoulders. Her gown was as low in the front as it could be without falling off and as diaphanous as it could be and still be called a garment, and she had everything it took to be dressed like that. She glided toward Lortud, and with a smile on one of the most beautiful faces any of them had ever seen, held out her hand.

"I am Hita Vivar Arossa," she said, "Mayoress of Mendota, and I welcome you, Commodore Lortud."

"Glad to be aboard," said the Commodore, and turned to present Pelham and Yurka. Hita Vivar Arossa favored each with a warm pressure of the hand, then took Lortud's arm.

"If you will follow us," she said. "We have prepared a small reception for you."

They were near the edge of the water, which revealed itself as a smooth lake, studded with islands. Violins began to play somewhere. The Mayoress of Mendota led the party along a path like velvet under the feet, round a clump of trees that looked like a banyan but had flowers at its base, and they saw spread at the water's edge a table, glittering with crystal and silver. There was a place for each of the Earth-men, and at each alternate place a girl, like Hita Vivar Arossa both in being dressed revealingly and in having something to reveal.

The Mayoress led the way to the head of the table. "I will have you on my left, Captain Pelham," she said. "This is Zanday Maniu Banita, one of my Councillors, who will be your partner. And this, Commander Yurka, is Iren Tenally Momenna, another Councillor, who will be yours." She raised her voice and clapped her hands. "Let the others introduce themselves."

Yurka found himself looking into a pair of extremely blue eyes under a mass of blond hair. "Are all your Councillors women?" he asked as they took their places.

The Mayoress touched a stud at the side of the table and the violins began again, now accompanied by a wind instrument which might have been a saxophone with a singularly sweet tone.

"Oh, yes," said Iren Tenally Momenna. "That is, I think there's a man Councillor at Hodell, but that's hundreds

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of miles from here."

Waiters began moving along the back of the tables, filling the tall crystal goblets. The Mayoress leaned across. "I was just telling the Commodore that after the reception we will go for a sail on the lake," she said. "If you would prefer another partner for the evening, please ask her."

"Thank you," said Yurka and turned to his own partner again. "I'm interested," he said. "How does it happen that the women hold all the offices?"

Iren looked at him. "Why, we have to pass a beauty examination to be elected —of course. Our geneticists made that part of our constitution. Look at Hita Vivar, there. She's not even a native; came from Earth only about two years ago, and she's already a Mayoress, and will probably go on to the District Council. But she's so—"

Yurka suddenly said, in a loud, flat voice: "Commodore, I don't think I'd drink much of that wine, if I were you!"

FACES turned toward him, Pelham's astonished one over a goblet he already held.

Lortud's voice was cold. "Why not, Commander?"

"Because this place is a trap; a worse trap than Kushan. I've got the whole picture now, and my theory's air-tight."

Hita Vivar was looking at him with big luminous eyes. "No," she said. "I'm not trying to—"

"I know you're not," said Yurka. "You can't help it. You've been conditioned, too. I know exeactly the program. You're supposed to take him out in one of those gondolas, and then keep him all night, and then stretch it out into more days and nights and weeks. And he's supposed to see that the men are enjoying themselves, too, and not to care too much. He's been conditioned that way. And by the time we get back to Earth, the corporations will have their hooks in the E Centauri mines, good and solid."

Lortud's voice was still cold. "I think you owe me an explanation, Commander —also one to our hostess here. And you had better make it good."

"All right, it will be. When you started out on this expedition, you and every fighting man in the squadron, were psychologically conditioned to remove your inbred stops against violence and killing, and kind of *Schadenfreude*, weren't you?"

"Of course, but—"

"Let me finish. Who conducted that conditioning?"

"The Medical Board, as it always does."

Yurka said, "Has it occurred to you that people like the Anthony Corp could reach someone on the Medical Board?"

"Do you mean that I was wrongly conditioned?" Lortud's frown was that of a man not quite able to grasp what was being said.

"I mean a hell of a lot more than that. I mean that practically every man in the squadron got a dose of this special conditioning, over and above what he needed to make him a good fighting man. Beginning with De Santis as supply officer, when he didn't give the squadron enough food and water to make the return trip in one hop. Then Hondschoote, who proposed the ingenious plan of stopping off at that damned planet where you nearly got caught by those lobsters instead of going to Hauraki direct. And yourself, Commodore; the use of that special fuel alterant at Hauraki, something you didn't know anything about, was really an irrational act."

The music had stopped. Down toward the end of the table one of the members of the escort was embracing his partner as they drank from each other's goblets, and the pair next to them were laughing as they watched. Lortud said slowly, "You make something of a case, but not a very good one, Yurka. Why couldn't they just have conditioned someone in the fleet to shoot me and get me out of the way?"

"And have him subjected to psychic examination, and their participation

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brought out afterward? No, they wanted a fool-proof scheme. They wanted to involve you in a series of incidents that would take you from planet to planet over a period of time long enough for them to operate at home. I imagine they rather hoped that you would come a cropper somewhere, but they had to predispose you for courage and ingenuity in addition to these same qualities latent in your mind already. Even conditioning can't overthrow a latent pattern, you know, only intensify it, or change its direction. So they built into your mind a choice-pattern that would bring you through all right probably, but only after a long time." He laughed. "The only trouble was, they couldn't condition your psychological officer, and they happened to get one who had read the ancient literatures."

Down the table one of the escort and a girl moved toward the water's edge and a gondola, arms around each other. Lortud said, "What do you mean?"

"I mean that they built into your mind a choice-pattern, when decisions had to be made, that was probably suggested by the fact that your remote ancestors were Greek and you were going on an expedition against a place called Ilya. You have been acting out Homer's Odyssey in modern terms."

COMMODORE LORTUD passed a hand slowly down his face, and seemed to be struggling within himself. "Yes," he said. "I read it once, long ago. We all do in our family."

"The planet catalogs back on earth are much more complete than anything we can carry on a space-ship," Yurka went on, remorselessly. "They could easily select those that in some way fitted the pattern of the Odyssey and introduce into your mind only a slight predisposition to follow it. With the latent Odyssey pattern at the back of your mind, you'd be sure to choose as they wished. What was the first place Ulysses visited on his return from Troy, or Ilium? The island of Ismarus. That made it certain that when you found a planet named Asmara in the star catalog, you'd go there rather than any other place."

Lortud said, "I see. And while I thought I was choosing these places on technical grounds, I was really following orders? Is that it?"

"Pretty much. They got you to the island of the Lotus-Eaters and the Cyclops. Of course, they couldn't hit it on the button every time, but—"

Lortud made an impatient gesture. "And where are we now, then?"

"The island of Circe," said Yurka. He jabbed a finger at the Mayoress. "She was sent out from Earth, conditioned to live the part. The dates check. And I'll bet all the bathing suits in California that this wine has something in it beside just alcohol."

Hita Vivar Arossa had both hands before her face. Now she said softly through them, "No. Oh, no. I'm sorry if it's true, I only wanted—"

Lortud stood up. "I have a wife," he said, as though the words were being wrung out of him, "and I'm going home to her—now." He faced Yurka fiercely. "Is that a dictated decision?"

"No," said Yurka. "I think you're out of it—Grab her!"

The Mayoress had suddenly flung herself from her chair and started to run, but she took only two or three steps before Lortud and Pelham had her arms. There was a tinkle of broken glass; the two councillors screamed, and Hita Vivar twisted in the grip of the Earthmen. "Ship, ship," said Yurka into his speaker. "Double landing party. Emergency."

In the background were shouts and the sound of running feet. "They've got the Mayoress! Call the police!"

Part of the escort were forming around the leaders, dragging three or four with dazed, uncomprehending faces, who had evidently been drinking the strange wine of Calla.

"Come on!" Lortud's voice rose above the tumult, and at a stumbling run, they

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were making their way along the smooth path to the landing platform. Somewhere behind, where figures moved among the dim lights, a shot was fired and went pinging past, but there was a cry of "Don't shoot, you'll hit her!"

"Let me go, let me go!" Hita Vivar cried, and Lortud said, "Shall I?"

"No," panted Yurka. "We've got to take her back to Earth and put her under psychic examination. It's the only way we'll ever prove anything."

Ahead on the platform another landing compartment came down with a clang of metal, and the landing party began to spread out in skirmisher order, weapons ready. A beam of light shot past from the mass of the ship overhead, and they were inside the compartment. Hita Vivar Arossa collapsed, sobbing.

"What will they do to her?" asked Lortud.

"Nothing," said Yurka. "The psychic will show what has been done to her and who did it. Then they'll let her go. She can even go back to Calla if she wants to—but I can think of a few people who might try to persuade her to stay on earth."

The air-lock hissed and swung open. "Shall I lift off?" asked Pelham.

"At once," said Lortud.

A lieutenant met them in the corridor with a salute. "Sir," he said, "The *Bayern* reports trouble in her main generator room. She has been in touch with ground here, and they don't have a shop capable of handling that type of repair here, as this is a nontechnical culture. But Commander Eschelman has been looking at the catalog, and he says that in the system of Beta Herculei they have a planet which could do the job. It's only a short run, and the *Bayern* requests that we stop there."

Lortud looked at Yurka. "You're practically commander of the squadron now. Is this another conditioning job?"

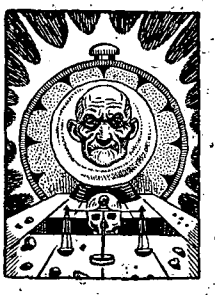
Yurka said, "Probably. What type of star is Beta Herculei? That sounds like an awfully bright one."

The Lieutenant said, "It's a B type, but the planet is some distance—"

"That is, a very hot star." Yurka turned to the Commodore. "They're getting rough. Do you know what the identification is in the pattern of the Odyssey? It's Trinacria, the Island of the Sun. And you know what happened to Ulysses there."

Lortud gave a wry grin. "Unfortunately, I do. He lost most of his ships and nearly all his crews there. I see what you mean."

He swung toward the Lieutenant. "Signal the *Bayern* to land here on Calla and await a relief ship with repair materials. The crew will enjoy themselves. The rest of the fleet will proceed Earthward at once. The Council will probably give me hell for leaving a ship behind, but this is one time that Ulysses is going to get home before the suitors have eaten up everything he owns—and with his crews all in one piece."



Coming Next Issue: THE REGAL RIGELIAN, a Sequel to "The Merakian Miracle," by KENDALL FOSTER CROSSEN

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In a displaced land of strange customs, Flyer Wayland falls victim to women's wiles

The Iron Deer

by SAM MERWIN, JR.

MARC WAYLAND spotted the odd whorl in the cloud formation before he saw the power balloon. As a pilot-captain in the Meteorology Branch of the United States Army Air Force it was currently his assignment to study weather formations in the Eastern Pacific. Especially during the days following the preliminary H-bomb tests which were being conducted under a blanket of supposed secrecy on an atoll some four thousand miles to the west.

A trained weather man, Marc was one of several score pilots cruising daily off the California and Oregon coast, seek-

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ing evidence of any unusual cloud conditions that might be traced to after-effects of the immense explosions. He was part of an intricate team of thousands of specialists, on the ground, in the air, on the sea and even under it, who were checking at set distances the possible results of this newest and most frightful weapon.

It was his fourth straight day of fruitless patrolling after the detonation of test H-for-Henry near Ponape and he was in a state of near self-hypnosis from the dreariness of his assignment when he saw the whorl in the clouds.

This whorl was definitely out of the ordinary and therefore was worthy of interest. It was roughly a vertical oval and it was big—from a rough gauge of its distance Wayland estimated its height to be two or more miles. The cumulus clouds that surrounded it were swirling back upon themselves in a moving cottony frame, and from the oval itself glowed an odd peach-colored light. This, although the sun was still above and on the near side of it.

Wayland swung his rebuilt Mustang toward it, flipped the switch that put his color cameras in operation. He was about to key in his radio when he saw the balloon and stopped, momentarily paralyzed with astonishment.

"I'm batty!" he muttered, unaware that he was talking aloud. "I must be."

It looked, as he came abreast of it, more like a primitive dirigible than a balloon. Its body was cylindrical, coming to a conical point at each end. Its surface was rust red in hue and of some sort of fabric, for he could see the outlines of a rib structure beneath it.

An odd nacelle was suspended from its hull—a nacelle that had windows and even a sort of porch around it. From its rear an exhaust stack protruded and white smoke belched from it. On either side of the stack large propellers, looking as fragile as butterfly wings, spun lazily. There was also an oarlike device that obviously served as a rudder.

Marc frowned through his goggles, then keyed in the radio and got base. "Odd gap in cloud formation ahead at two thousand feet," he reported. "Am photographing and flying closer."

HE FLIPPED off after receiving the routine warning not to risk his plane, pictures or—an afterthought—himself. He was not going to report the balloon or they *would* think he was bats. He was going to let his camera speak for him where that weird object was concerned.

He swung the Mustang to get pictures of it, half wishing it would go away and let him mind his business. But as he circled it, automatically taking pictures, he became more and more convinced of its reality. And from somewhere in a dusty cranny of his memory a sense of recollection, of *deja vu,* crept out to overwhelm him.

The gears of his mind meshed. He thought back to his boyhood, to an attic full of long-since-discarded Nineteenth-century magazines, a treasure trove of early youth. There had been lithographs or steel engravings of primitive airships much like this one, some more absurd, some less.

The memory was not reassuring. It was keyed to more recent, less exotic anachronisms. Six months on the god-forsaken AAF base at Santa Agatha, with only a couple of week ends Stateside, were enough to make anyone island-happy.

Just one hundred miles off the coast of Central California, Santa Agatha was one of a group of a half dozen islands of assorted small sizes which should, in the opinion of Wayland and every other officer and man there stationed, have remained uninhabited.

All but Santa Agatha itself were mere upjuttings of the peaks of a mountain range that, tired of living, had sunk to rest in the Pacific, but had been too spent even to finish the job. Santa Agatha, through some ancient volcanic outburst was flat—flat enough for the airstrip that was now its only reason

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for habitation by anything but migrating seals and goony birds.

The base itself was a dismal collection of shacks and huts and jerry-built hangars, while halfway up the rocky slope across the strip were the Charles Addams ruins of what had once been another of those hapless experiments in communal living that had dotted the country during the latter half of the last century.

This group, its name forgotten save by curious antiquarians, was irreverently termed "the termites," since only white ants lived there in any number. The human members had simply up and vanished without trace seventy-odd years earlier, and since they had had virtually no contact with the mainland had been consigned to oblivion.

For some reason the strange airship made Wayland think of the row of double-porched frame buildings with their odd domes and cupolas and turrets and gingerbread fretwork, all in rotting disrepair. He recalled the weatherbeaten iron deer, one of its antlers rusted away, which stood just inside of what had been the colony entrance at the foot of the slope—an ugly, hapless, yet oddly appealing example of human futility.

He was circling the airship a second time when to his amazement a man, wearing frock coat and a large black spade beard, emerged from a door in the houseboat-like nacelle and waved at him. Wayland gestured back in salute as his Mustang roared underneath and hoped his cameras had caught the figure.

His interest high, he looped, circled again, again flashed past the balcony with its bearded occupant. This time he got a definite flash impression that the man in the frock coat was trying to wave him away. He grinned, thinking that a bit of buzzing was small return for the fright the appearance of the ship had given him.

He swung around again—or prepared to—and then realized with a sudden panic why the airship man had gestured. He had been so intent on photographing the strange ship and studying it to his own satisfaction that he had committed an unpardonable sin for an airman—he had lost all contact with his whereabouts.

Evidently the ship had been heading straight for the whorl in the clouds, for all at once Wayland found himself in a rocky mass of cotton clouds whose mists boiled around him and tossed his Mustang as if it were a child's toy. He cut for a gap in the cumulus castles surrounding him and gave her the gun.

There was a sudden flash of brilliant light, a jolt that made his joints ache, a feeling he could only describe to himself as that which occurs in a movie theater when two reels, inexpertly pasted together, flash brightly and briefly. It was a jarring sense of disconnection.

The next thing Wayland knew his motor was dead, and he was battling suddenly useless instruments in an effort to keep from crashing under a peach-colored sky. He caught a glimpse of maroon-hued vegetation spinning toward him, tried to aim for what appeared to be patches of purple farmland on the near side of a deep yellow sea, had a moment of joy and relief as it seemed he would clear the trees and pancake safely in. He never saw the stone wall at all. . . .

WHEN Wayland returned to consciousness his first impression was that he was in a land of giants. His second impression did little to lessen the first. The heavily bearded man who looked down at him could have been only inches under seven feet tall. Wayland, who was lying on a field of lavender grass, sat up and, when his head had reassembled itself, saw that behind the muff the man looked to be quite young.

After giving him a quick study, Wayland asked, "Where's the frock coat? Or weren't you the guy who tried to wave me off?"

"The frock coat?" Black eyebrows

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rose. Then the man said; "Oh, my Prince Albert. I left it at home after we landed." He spoke slowly, seemed to think painfully before adding, "Yess, I tried to warn you away. Are you all right?"

"Give me a hand," said Wayland. The young giant, currently clad in a pair of levis and a homespun shirt, both purple in hue, extended a hamlike palm with huge fingers and pulled the flyer to his feet with an ease that suggested immense strength. He had the weathered look of a man who has lived much out of doors.

He studied Wayland for a moment, then said, gesturing toward the wreck of the Mustang, which was resting on a hopelessly crumpled nose, "You were thrown clear. I was told to welcome you to New Vineland. My name is Wilburforce Smith-Halsted."

"I'm Marc Wayland," the flyer told him, "United States Army Air Force." He added, "Captain," by way of further identification.

Apparently it meant nothing to the young giant, who continued to regard him more with bewilderment than curiosity. Wayland, feeling increasingly as if he had tangled with a meat-chopper, went to the wrecked ship and, with the giant standing gravely by, salvaged a few of his things—the wing camera, emergency kit, log pad. Realizing he was still wearing goggles, helmet and full flying kit, he decided this might account for his rescuer's bewilderment. He got out of them and, with Wilburforce Smith-Halsted's aid, carried them to a two-wheeled cart which stood waiting on a dirt road alongside the field.

At sight of the animal hitched to the cart Wayland did a quick double take. It looked to him exactly like the beast on the reverse side of a pre-Jefferson nickel—in short, a bison or American buffalo. That it had been domesticated was evident not only in its obedient docility but in the fact that its tail was adorned with an orange-yellow bow and its shaggy mane had been clipped like a Fifth Avenue French poodle's.

"Giddap, Bucephalus," said Wilburforce when they were seated on the rough plank that served to support them. With a whiffling grunt the bison got under way, carrying them slowly toward a low purple hill perhaps a quarter of a mile ahead of them.

"Tell me," said Wayland after a while. "Just where are we?" There was something disconcerting about his huge companion's faculty for taking everything for granted.

"New Vineland," Wilburforce repeated. "Antioch lies just over yon hill." He turned then, regarded Wayland with mild interest. "Folks are excited. You be the first outsider to come through since the settlement."

"Let them ring out the fatted calf," said Wayland.

"Your metaphor be mixed," Wilburforce replied with his usual gravity. Wayland decided to shut up, although he was anxious not only to discover where he was but how the balloon had functioned, how he could get his Mustang repaired for a return journey. However, talking to Wilburforce was a painful process and the flyer decided to wait until he found someone more articulate.

Thus, in silence, seated on a plank behind a plodding bison, Wayland was driven to Antioch. It seemed a pleasant little township, when first he viewed it after the cart topped the gentle rise, and closer approach confirmed his first impression.

Of course, the orange sky took some getting used to, as did the bright blue sun, large and low in the heavens. Beyond the foliage and turf of varying shades of purple which surrounded the community, he caught another glimpse of the deep yellow sea bordered by light green sands.

The houses, of frame for the most part although the principal buildings were of green brick, struck a chord of memory. They were like small Charles

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Addams structures in perfect furbishment and repair, little gingerbread horrors, every one. Antioch was dominated by a large neo-Grecian structure, a temple of some sort Wayland decided, which stood on a hillock shoreward of the other structures and surrounded by a neatly clipped purple lawn.

They passed houses, perhaps a score of them, and came to a sort of center or plaza or common—village green was definitely not the word for it here—around which were larger structures, a quartet of stores, a farrier's, something that might have been a school.

Here they turned right, away from the temple, and pulled to a halt before a house larger and more ornate than any of the others. An iron deer that might have been an unrusted twin to that standing forlornly in front of the rotting "termite" house on Santa Agatha, caught Wayland's eye.

By this time they had attracted quite a following. Old men and young, girls and women of assorted sizes and ages and a large number of children surrounded the bison-cart, all of them staring in frank curiosity, but none of them making a sound. Their clothing, beyond its general purple hue, was oddly and archaically familiar. Again Wayland was reminded of the illustrations in the old magazines in the attic of his childhood home.

THREE persons emerged from the large house, passed the iron deer and approached the cart. They were an immense woman, whose long tubular skirt swept the purple grass as she strode toward them and whose piled-up brown hair added five inches to her height—a thin balding little man with a pepper and salt vandyke beard—and a red-headed maiden who looked very feminine indeed despite a starched shirtwaist and whose demureness of manner was denied by the frank appraisal her gray eyes gave him.

"Welcome to New Vineland," cried the woman in a voice that reminded Wayland of Kirsten Flagstad doing the Valkyrie yodel. "Welcome, welcome, *welcome!*"

She extended a hand and Wayland, who had descended hastily from the bison-cart, took it and had to fight to keep his knuckles from being crushed. "Delighted," he said, feeling foolish.

"Glad you're safe," said the man with the vandyke, shaking hands in turn and far more gently. "I don't mind telling you you gave us a scare when your—ship fell. I'm Smith-Halsted, elector of New Vineland. This is Mrs. Smith-Halsted"—with a nod toward the huge woman—"and this is our daughter, Sappho. I believe you already have met our son, Wilburforce."

"Oh, sure," said Wayland. "I've met Wilburforce."

"I hope you will honor our humble hearth with your presence whilst you be here in Antioch," said the large lady.

"I'd be most grateful," said the flyer, feeling like a ten-year-old at a party for grownups and noting that Sappho—a ghastly name, he thought—had an enticing dust of freckles across the bridge of an exceedingly pert nose.

"It is we who shall be grateful," boomed the large lady. "For we have received no word from our former home in many long decades. Since our expedition proved a total failure—" the look she hurled at her husband suggested that if *she* had run things the result would have been different— "you are trebly welcome."

There were cheers and then Wayland found himself moving through an odd sort of dream that included being ushered into a comfortable room, bathing in an ornate tin tub filled with hot yellow water, being outfitted in loose-fitting purple garments that featured creaseless pants with side buttons, and finally coming downstairs to be served a glass of excellent wine amid the Smith-Halsted family.

". . . and while the temperance group among us felt strongly about allowing the grapes to ferment our majority felt

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that the presence of such rich wild grapes in New Vineland and the entire *purpose* of Christo-paganism would be better fulfilled by using the grapes God gave us here for their immemorial purposes—in moderation, of course, in moderation."

It was Mrs. Smith-Halsted booming on, as she had boomed almost without cessation since his entrance. The name Christo-paganism rang another gong in Wayland's memory. He said, "Didn't you people originally come from the Termite-Hutch—I mean the settlement on Santa Agatha—off the coast of California?"

"You've been there—you've seen our New Olympus?" There was breathless excitement in Mr. Smith-Halsted's voice.

"I took off from there this noon on a weather-flight," said Wayland. He had been right, of course. This was the lost settlement. He added, "Could you tell me just where I am?"

"For a while the founders thought this was paradise," said Smith-Halsted. "It was sort of a miracle. Many years a—"

"The Founders took off in two large balloons on August thirty-first, eighteen eighty-three," interrupted Mrs. Smith-Halsted decisively. "My great grandfather was their elected leader and took them first from Utah, when the Latter Day Saints objected to our faith, to California, then to Santa Agatha to avoid persecution.

"Finally, when the Governor of California refused to permit supply ships to sail to Santa Agatha unless we agreed to observe the Sabbath, he decided it would be best to seek haven in some uncharted island of the South Seas, far from the vicious restrictions of American society. My great grandfather, Dr. Isaac Halsted, was a brilliant scientist, and under his aegis the two balloons, the *Argonaut* and the *Pilgrim* were constructed."

She went on talking through dinner, which was plentiful and excellent with a buffalo roast as its pièce de résistance, and Wayland began to get the story. Apparently the balloons had come through traps similar to the one he had encountered and settled on this strange world where a new home was founded.

The date—August 31, 1883—bothered Wayland until at last, looking up from a compote of strange but succulent white fruit with faint veins of purple, he told them, "Your ancestors must have hit something following the Krakatao eruption of August twenty-seventh. That eruption caused odd phenomena all over the world."

WHEN the meal was finished and the two women had left the table, apparently to tend to kitchen chores, Wayland asked his host about the buffalo.

"Frankly, they are a biological mystery," Smith-Halsted told him. "They were here when we arrived." He laughed shortly. "I fear me our little tribe could not have survived without them. Their presence caused us to fear the imminence of Indian onslaught but we have yet to find any evidence of other human habitation. They have given us meat, clothing, fats and even ivory, and they have served us most excellently as dairy animals and beasts of burden."

Wilburforce departed then, with a grunted excuse about a meeting. He looked to Wayland like a young bumpkin en route to a date. Wayland shuddered to think of the courting dialogue that must ensue. Then Wayland and his host exchanged questions and information. There was much to learn on both sides, much to be put together.

It quickly became evident that the gateways between the universes, if that was what they were, appeared only on the day following a cosmic explosion of force. Krakatao had been such a one and, to the flyer's surprise, he discovered that the New Vinelanders had a good record of others.

Dates roughly corresponding to the Mt. Pelée disaster, the great Lisbon earthquake, the San Francisco earth-

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quake of 1903, the meteor landing in Siberia in 1904, the Japanese earthquake of 1923 and others were on the local log. After listing them, Smith-Halsted mentioned the recent frequency of such occurrences with some concern and explained that this frequency had impelled him to have one of the old balloons reconditioned.

Wayland gave him a quick sketch of world history since the departure of the Christo-pagans, told him of the development of nuclear fission and the A- and H-bombs. When his host had recovered somewhat from his horror, Wayland asked, "And may I ask how the hell you are able to make your observations?"

"Come," said Smith-Halsted, "I shall show you."

He led them out a rear door, carrying an oddly shaped chimney lamp of some sort of hard-baked ceramic material. "Nature is different in our new world," he said, indicating the lamps. "The heavy metals are utterly non-magnetic here. Consequently we have to make do with other elements for our ultilitarian needs. Silicons and some of the clays are surprisingly good substitutes for these needs."

"Sounds almost rhodomagnetic," said Wayland, then wished he hadn't, for he knew little of the newly-found secondary magnetic science and could be of little help educationally. But he stirred his host greatly.

"My wife's great-grandfather had some such theory worked out," he said. "I wish he could have talked to you. Young man, your coming here may prove an immense blessing. You can give us much of your world's progress without its destructive elements."

"No wonder my plane went in," muttered the flyer. "If iron is like putty here, nothing would work. And that explains why you put up the iron deer I saw in your yard."

"Dr. Halsted felt it a sort of symbol, a tie with the world we left," began Smith-Halsted. He was interrupted by a call from his wife, who shrilled, "Hector, don't keep Captain Wayland up too late in your observatory. He's had a trying day."

"We shall be back directly," said her undersized husband.

"Remember, tomorrow is Sunday," Mrs. Smith-Halsted bellowed.

"Yes, dear."

There was a definite droop to his shoulders, which vanished as they entered a little octagonal one-room building on a knoll in back of the house. He lit other lamps, and the flyer saw that the room was a sort of laboratory filled with musty scientific impedimenta of a bygone age. He did recognize retorts, test tubes and chemical flasks, as well as an odd structure that looked vaguely like a deformed telescope and was pointed toward the roof.

"No, it's not a telescope," Smith-Halsted explained. "We have not the instruments even to begin to chart the heavens here. The atmosphere is intensely murky. This is the telestereoscope, with which we can observe our original planet."

"*What?*" exclaimed Wayland. "You don't mean—"

"But I do," said the other. "At first, our people thought it meant we were in heaven. But Dr. Halsted and others were able to disprove that. This world is attached in some way to its prototype. We can view Earth although apparently Earth cannot see us."

"One-way glass in space-time or something," said the flyer and instantly regretted it—he had to attempt to explain both one-way glass and the space-time continuum to his information-starved host.

Then Smith-Halsted went on to tell him that his instrument was a sort of stereopticon, whose twin lenses enabled the viewer to pierce the day-yellow atmosphere and actually see Earth—not close at hand as it was in travel but as if it were, say, 50,000 miles away. Wayland decided it was some sort of space-warp but this time he kept his mouth shut.

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HE LOOKED through it then and viewed Earth. Evidently he had been gone more than twelve hours, for he could see the Pacific area, even the North American West Coast. He spotted a faint yellow dot below San Francisco bay and asked about it.

"That is the gateway we journeyed through," Smith-Halsted informed him. "It is fading out now—it was larger and far more brilliant." He went on to explain again how the increasing frequency of such markers had finally caused them to undertake the trip which had, in its wake, brought Wayland through the barrier.

"It's an amazing machine," he concluded. "Dr. Isaac Halsted was a genius in his way, albeit a strange one." He sighed. "He was shrewd enough to discover that a coating of a sort of ambergris, which is washed ashore during our spring storms, would enable this instrument to pierce the barrier between worlds."

They talked further until, regretfully, after a look at the hourglass, which served as a timepiece in this world where watches of steel could not work, Smith-Halsted said they had better be getting back to the house. They returned, walking under a black starless sky.

"What does the Moon look like?" the small man asked wistfully, just outside the back door of his house.

"You should have come through at night," Wayland told him. All at once he felt a little sorry for his host.

He stopped feeling sorry and fatigue fell from him when he entered his bedroom and found Sappho Smith-Halsted sitting demurely on the edge of his big double bed. She was clad in what looked like an old-fashioned nightgown, her hair was in braids, her face had been scrubbed.

"You were awfully slow getting here," she said almost matter-of-factly. "And, look, I brought you your robe for tomorrow." She stood up, looking like a very young doll, holding out to him a lavender toga-ish garment with a Greek pattern in black and white around the bottom. "You'll wear it at the pagan rites."

"Don't tell a soul," he said, whispering, "but I'm knock-kneed. Incidentally, hadn't you better beat it back to your room?"

"Of course, if you're too tired," she said, looking at him expectantly. Then, her face crumbling, "Or if I lack grace—"

"Good heavens, girl!" he exclaimed. "What about your mother?"

"Why—what about her?" the girl asked so naturally that Wayland forgot about it. "If you preferred one of the other girls you saw this afternoon, I'll go, of course. But if you didn't—"

"Honey," he said, "I try never to disappoint a lady. But I would like to see what I drew in this sweepstakes. How about shucking that Mother Hubbard and showing yourself?"

"*Captain* Wayland!" she said, deeply shocked. "*That* would be indecent. Not until you blow out the light."

Later, before going to sleep, he turned his lips toward her soft little ear and murmured, "Remind me to ask your father just why the Governor of California wanted you people out of the state. Or was it his wife who objected?"

But Sappho was already asleep, soft and sinless as a kitten.

To Wayland's horror it was the she-dragon herself who awoke them come morning. But horror became bewilderment when his hostess turned out to be all smiles, sent her daughter packing and placed a breakfast tray on the table beside the big bed.

"Some of our customs may seem—unusual," she told him, "but then the conditions under which we exist are not in accord with conventions on Earth. My great-grandfather felt that our extraordinary needs outweighed our inclination to retain certain accepted forms. As a result, in less than four generations, we have increased from

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our original thirty-two to almost a thousand."

"I quite understand," murmured the flyer. When she had gone he looked around for his clothes and discovered that only the robe was left him. He got into it with some difficulty, wondering how he was going to be able to keep himself decently draped, although with local theories of decency he wondered if it were necessary.

It was, he discovered. That morning he went with the rest of the people of Antioch to the temple, where behind the altar a crucifix was flanked by crude statues of Zeus and Hera. The service was a bizarre mixture of Christian and pagan rites, followed by a solemn ritual dance on the purple sward outside. Then everyone adjourned to the beach beyond the temple, robes were shed and the entire community took to the water, stark naked.

"The Romans bathed thus," said his hostess, and Wayland restrained a shudder at sight of her mass of bulging, quivering flesh. Sappho, he thought gratefully, seemed to take after her father physically. Wilburforce—the name struck him as an anachronism in this collection of ancient Greek and Roman cognomens—had inherited his mother's physique.

A FEW days later he asked Wilburforce about it. The young giant grinned behind his beard. "My great-great-grandfather had a brother who made him much wealth in California gold," he said. "So my mother deemed it prudent, were we to return to the Mother Earth, to give me his name, should I be mentioned in his will."

"Eminently practical," said the flyer. Then, because he was feeling unavoidably friendly, "That sister of yours is a grand gal. I'm crazy about her." Which was little less than the truth.

Wilburforce shrugged. "The others she's had have not found her so—too hoity toity, Marcus. Mayhap 'tis because you are new here that she is according you full hospitality."

"The others?" said Wayland, gulping. Wilburforce shrugged.

"Oh, yes, of course. She is far too comely not to have been assigned to mating trials before. Let me see—" he frowned faintly— "her first was Labienus O'Brien, who works in the wine shop. Then last year there was Alexander Dubois from the outlying farms and just last month—"

"Skip it," said Wayland shuddering. "I'd rather start from scratch. I don't want to kill anybody."

Wilburforce stared at him, puzzled. Then he shrugged and turned away. That night, in his room, Wayland and Sappho had their first serious quarrel. The flyer knew he was being unreasonable but he couldn't help it. The shock of the "mating trials" had undermined logic. Sappho fled, weeping, to her room, and he spent a wretched and most uncomfortable night in solitude.

The following morning he was down early, waylaid her as she descended, heavy-eyed, to breakfast. At the foot of the stairs, when she turned to reascend them in an effort to escape him, he caught her to him and kissed her solidly, then murmured apologies into her ear. A squawk from the head of the stairs interrupted him.

"Hector, come quickly!" boomed Mrs. Smith-Halsted. "It's happened! Sappho and Captain Wayland have sealed their troth."

"Huh?" said the flyer, looking wildly around. A pair of firm but soft young arms all but choked him as Sappho flung herself against him. "You darling, Marc," she said joyfully and burst into tears. Wayland stared at her, a trifle dazed and wondering just why a kiss should be important after the other things that had happened between them.

He found out. A public kiss, it appeared, meant to Antiochans the sealing of a troth, the decision to put a trial union on a permanent and legal basis. In short, by sunset that afternoon, the

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flyer found himself married.

"You'll stay with us, of course, dear boy, until the next house-raising," Mrs. Smith-Halsted babbled on happily. "Wilburforce will see that you receive a fitting home. Until then—"

It went on and on until a dazed Wayland was relieved to be back in his room with his bride. Sappho, her gray eyes luminous and large, looked at him levelly as she braided her red hair.

"You didn't know what a public kiss meant, did you?" she asked him. "There is still time to back out if you wish. It won't be easy for me, of course, but it can be arranged."

Wayland did the only thing he could, although he had a nagging awareness of the fact that more than once since his arrival Sappho had seemed to be tempting him to kiss her on the beach or in public. He was caught for fair. Still, studying her as she lay asleep, noting the tilt of her nose, the fullness of her lips, the fresh fairness of her lightly freckled skin, he decided that he hadn't come out so badly after all.

He was kept busy, of course, not only working with his host but in advisory capacities wherever his technical knowledge seemed potentially useful. Since glass blowing was a settlement specialty, he was able to evolve an electric lamp with spun clay filaments that functioned moderately well. A huge wooden dynamo was erected near a waterfall at the lip of the hills behind Antioch, and there were other and lesser functions to keep him busy.

He thought he was happy enough until one night, when he was with Smith-Halsted in the observatory behind the big house, he saw one of the gateways appear over Ponape. "Test Isaac," he muttered as it grew great and blazing over the Pacific area.

All at once he knew he had to get out of there. He was being smothered by a matriarchy. Furthermore, he was in a world where he didn't belong, like some wartime flyer interned in a neutral country. He was away from his real job, his real career.

"Amazing how the ambergris coating receives the images, is it not?" said Smith-Halsted, his vandyke wagging. "It takes a very delicately fixed layer to get clarity. Too thin, and we see only shadows; too thick, the reverse."

"What do you suppose would happen if a chain reaction really got out of hand over there?" asked Wayland. "I mean on the stereotelescope—or whatever it is."

"I imagine the gateway areas would consume the whole of earth," said Smith-Halsted. He shuddered violently. "It is not a pleasant thought. A globe of brilliant orange light! The end!"

"Cheer up—my mob will keep things in hand," said Wayland with more assurance than he felt. Then, casually, "I'd like to look over the *Argonaut*—tomorrow, maybe."

Smith-Halsted regarded him quizzically. "You want to get out, son?" he asked. Wayland felt his face grow hot. He turned away miserably and walked back alone to the house.

BUT the following day Wilburforce took him to the hangar on the far edge of town. Apparently Smith-Halsted had told him of Wayland's desire to flee, suggested that Wilburforce himself seek the greater opportunities on Old Earth. Just what he could do with the inarticulate giant once he got back the flyer could not fathom; but he decided to tackle first problems first.

The *Argonaut* was a jerry-built miracle. It didn't seem possible that controlled flight could be attained in such a primitive monstrosity—but he had seen it fly. It took him only a short time to get a sound idea of how it was inflated, of how the steam motor functioned. He felt oddly excited when he returned to the house for tea, told his brother-in-law, "We'll try it tomorrow at this time. The gateway should be in conjunction then."

"Ummm," said Wilburforce. He followed Wayland back to the house, sat

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silent during tea, according to his custom.

It was going to be tricky. Wayland lay awake long that night, considering the problems and perils to be met. But the prospect of even a chance at return had filled him with the pre-circus excitement of a child. He felt newly alive, a man reawakened from a bad dream. His desire to be free of New Vineland was a living thing.

After lunch he visited Wilburforce in his room, found him laboriously getting himself into the Prince Albert outfit. On close inspection he saw that the suit was carefully patched and redolent of a mixture of mothballs and sachet.

"It was my great-great grandfather's," the giant told him proudly, stretching his red neck within the high white collar.

"Why not wear regular clothes?" Wayland asked him.

"When in Romé—" said Wilburforce, and that was enough. The big fellow seemed, for him, faintly excited.

"I'm going up to the observatory to check the gateway," Wayland told him. "Be ready when I come back."

He felt furtive as he sneaked out the back door and made his way up the knoll to the telestereoscope. He hoped Sappho wasn't going to have a child by him, though it was much too early to tell.

Still, it couldn't be helped. He hadn't asked for marriage.

His hands trembled as he adjusted the remarkable instrument and peered into it. Then his body went rigid and an odd little sound, half moan, half sigh, fell from his lips.

The entire surface of the viewing plate was a blaze of orange light!

He staggered out of the building and around the house. As he passed the iron deer he gave it a savage kick. He was condemned to stay here forever. Earth—his Earth—had been destroyed!

* * * * *

Mrs. Smith-Halsted was pouring tea for Sappho and Wilburforce when her husband appeared on the porch, his usually serene countenance marred by a frown. He said irritably, "I'd like to get my hands on young Wayland. He spilled all the ambergris on the telestereoscope lens. It will be utterly useless until I can get more of it next spring." He sighed, noticed his son in the antique clothes, and inquired, "What's up, Wilburforce?"

"Nothing," said the giant sullenly. He seemed to be waiting for a signal that didn't come. He looked at his mother, said, "I *wanted* to make that trip. When I heard Marc planning it night before last I thought I be just right for that Hollywood he told us about. Now he be not going, it seems."

"He won't be going unless—" said Sappho, eyeing her father oddly.

He read her glance, understood. Wayland had not tampered with the telestereoscope—but Sappho had. Wilburforce, of course, had spilled the beans and the women had taken steps. Poor Marc! Believing his world gone up in an atomic blaze!

"Where is Marc?" he asked. "He ought to be around somewhere."

"He went for a walk," said Mrs. Smith-Halsted serenely, pouring herself another cup of tea. "He looked to us a trifle distrait. But I doubt not that he'll be home for supper."

The poor devil, thought Smith-Halsted, probably would.

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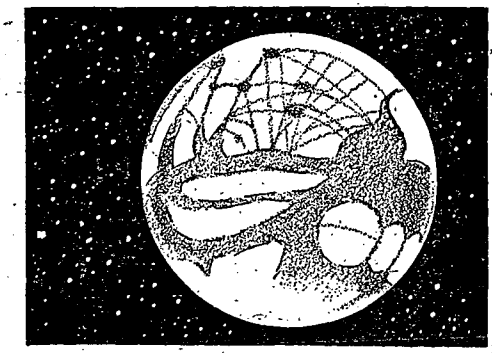

Part IV—The Iron Dwarf

By JAMES BLISH

PEOPLE who write about Mars from any sort of real information generally tend to be overcautious. They are afraid of aggravating the disappointments of their readers.

Ever since the explosion of Percival Lowell's lovely theory about the Martian "canals"—a theory which, like H. L. Mencken's hoax about the invention of the bathtub, still keeps cropping up as "fact"—astronomers and writers on astronomy have been reluctant to say anything that could be interpreted as endorsing the presence of any sort of life on the fourth planet from the sun. The reader of a modern "authoritative" article on Mars is a man wincing under a barrage of "maybes."

Many scientists — none of them, luckily, the top men in their respective fields — consider such tentativeness in the interpretation of data to be a mark of distinction; but we're not bound to observe it here. While it is, of course, true that at the moment we have no first-hand evidence of life on Mars, it is also true that almost every piece of secondary evidence which we've accumulated says: "There is life here."

We have only to apply the criteria which we have been using in these articles as the necessary pre-conditions for life, to see at once that the planet is almost a cinch to be inhabited.

Mars, except for its small size (it is 4,200 miles in diameter, slightly more than half the size of the Earth or Venus), is more like Earth than is any other planet in the solar system.

Mars has an atmosphere, about 60 miles deep, by latest estimates. The atmosphere shows infrequent clouds of various compositions, and seems certain to contain both oxygen and water-vapor.

Mars has polar caps, made of real ice. Mars has desert areas and green areas. Mars has definite seasons.

The temperature on the surface of Mars can go as high as 72° Fahrenheit, a nice, comfortable, spring-like warmth. Probably the temperature never falls below —50° F., which is frostbite weather with a vengeance, but weather

There Is Life on Mars—but Is It Intelligent?

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which, on the other hand, is no novelty to many parts of Earth. And there are parts of Mars, we think, where the temperature falls this low only two or three days out of the entire year, just as there are on Earth. In addition, the warmish seasons on Mars—spring, summer, fall—cover a span of nearly three Earth years, while winter lasts only a little over one Earth year.

In other words, every condition needed for life is present on Mars: oxygen, water-vapor, a moderate (if not always very friendly) temperature spectrum. And Mars' growing-season is three times as long as Earth's.

Nor do we need to depend upon this theoretical basis to say that there is life on Mars. Life has been observed on Mars. The behavior of the great green areas is the behavior of vegetation.

When the Martian spring comes, the polar cap in the affected hemisphere begins to shrink, exactly as if it were melting. And it is melting; the ground around its edges turns darker as the moisture seeps into it. Somewhat later, large areas of the planet begin to take on a definite green color, and the green areas begin to spread.

Conversely, as winter comes on, the polar cap gets bigger, and the green areas change to a sort of chocolate brown and stay that way until the next spring.

Of course, this behaviour *might* be due to some chemical process of which we know nothing. We won't know for sure until we actually see what's going on at first-hand. However, there is very little need to hedge. All the facts so far accumulated about the green areas agree with the way a vegetated area would look and behave—and, what is equally important, *none* contradict that impression.

A Tough Environment—but . . .

An astronomer, however, would be quick to point out that we have somewhat distorted the picture of Mars which we've sketched so far—not through error, for every statement cited above is a 24-carat fact—but by picking facts which make Mars sound Earth-like, and leaving out some other facts which make the planet sound a lot less homey.

The atmosphere of Mars, this astronomer would say, is real enough, but it is also very thin, unbreathably so. It is thinner than the air on top of the highest mountain on Earth.

Secondly, the amount of oxygen it contains is minute. Mars has so little of this vital gas in free form that any line which it might produce on an Earth spectrogram is completely blotted out by the oxygen-lines of Earth's own atmosphere. The presence of oxygen on Mars has been deduced from the presence of water, from the color of some of the deserts, from the probable presence of green plants, and from some recent developments in the theory of the formation of the solar system; but if it is too scarce to be directly detectable, we have to conclude that most of what there is of it is not available as a gas—that is, it isn't available for breathing.

A human being on Mars, then, would have to wear a respirator, and breathe bottled air. Probably the bottled air could be Mars' own atmosphere, compressed and enriched with oxygen extracted from the rocks; but Mars' atmosphere could not be breathed "straight."

Breathing Mars' atmosphere straight would have some other unfortunate results. The inside of the human respiratory system is wet, and has to stay wet if any respiration is to go on at all. The air of Mars, on the other hand, is dry enough to strip a human's lungs and mucous membranes of moisture after only a few breaths.

There's no doubt about the presence of water, water-vapor, and ice on Mars, but, unfortunately, there's also no doubt that Earth's commonest chemical compound is in very short supply on Mars.

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There are no seas on Mars, no lakes, no rivers, not so much as a puddle. The temporary muddiness about the poles at the beginning of spring is as close as Mars ever comes to having a "body of water." What little water-vapor there is in a given hemisphere is locked up in the ice of the pole itself during the winter; and during the summer, the plants hoard it.

Mars has no water to waste on moistening the air. There is never any rain or snow, except for an occasional flurry over the poles. The only water-containing clouds on Mars are high, feathery clouds of ice crystals; Mars' much more conspicuous yellow clouds are sandstorms, it seems.

Finally, a human being on Mars would need to be warmly dressed for the better part of three Earth years, and even on summer nights he would need clothing comparable to that worn during Earth winters. Mars is cold. The 72° top temperature mentioned earlier in this article is, for Mars, a broiling hot summer day, the equivalent of the hottest Sahara temperatures on Earth. The temperature goes that high on Mars only in the green areas at the height of high summer, and then only at noon for a few weeks each year.

Most of the time, Mars is a bitterly cold little planet. Dr. R. S. Richardson of Mt. Palomar and Mt. Wilson, science-fiction's own personal astronomer, has compared the climate of Mars to that of Tibet; northern Alaska also suggests itself, except that the Alaskan climate is far too mild and moist. For that matter, the Tibetan climate is mild and moist, too, placed against that prevailing on Mars during most of the Martian year.

All this does not add up to a planet much like Ray Bradbury's Mars, where people walk about and set up hotdog stands and go on picnics just as if they were not in an environment comparable with Earth's high stratosphere; but it is the real Mars, the one which scientists have been studying with the most intense interest for over a century. The real Mars is not a hospitable planet for human beings.

But these facts also show that properly equipped human beings would have little difficulty in living on Mars, with a minimum of complicated equipment. Human beings can and do live on the high steppes of Tibet and on the salt tundras of Siberia, and some of them seem even to like it there. Mars would be a tougher environment than these, but after the Moon it might seem almost cozy.

Those Mysterious Markings

Of course, no one would attempt to live on the deserts of Mars. These vast wastes are sandy—for we have seen the sandstorms rising from them—and nothing ever grows on them. They are a few thousand feet higher than the green areas, so that no water-vapor ever reaches them. They are simply enormous stretches of rock, dyed brick-red by all the oxygen which the iron in the rock has captured through the ages, and swept by dessicated winds which could mummify a corpse faster than the body could decompose.

The green areas probably are ancient sea-bottoms. We can be pretty sure that Mars had seas at one time, for the planet, which, like the Earth, the Moon, and Mercury, must have been mountainous in the beginning, now does not show a single mountain. The so-called Mountains of Mitchell, a polar area where the snow stays a little longer in the spring than it does in the surrounding countryside, is a possible exception.

It is impossible that Mars' thin atmosphere could have worn down all Mars' mountains faster than Earth's thick atmosphere and consequent heavy weather has worn Earth's mountains. Even Mars' present frequent sand-scourings are evidence for, not a substitute for, water erosion; for only water erosion, and certain geological forces which don't operate on a planet

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as small as Mars, can reduce mountain ranges to sand in such a hurry.

On these ancient sea-bottoms, then, the air is a little thicker, the soil is silt, and the water-vapor tends to accumulate. Plants grow here, throwing out as well as using oxygen. It is middling warm during part of the summer.

These plants will correspond to terrestrial mosses, shrubbery, and xerophytes such as cacti and other desert plants capable of storing water in a very dry atmosphere. Their vegetative life will be long, and their leaves incredibly tough; their flowering life, if they have one, will be very short indeed.

Flowers? Well, plants do flower. Mosses don't, but shrubs do, and so do cacti. And flowers mean insects, especially on a planet where wind-pollination is a comparatively small factor.

One of the reasons why there is no such thing as a giant insect is that the usual insect's way of extracting oxygen from the air is very inefficient, so that the mechanism could not support a really large animal. In other words, the average insect captures, uses, and needs far less oxygen than is present in Earth's air.

On Earth, the lowly cockroach has survived every climatic and geological change that has occurred on our planet for tens of millions of years. So have a number of other rather complex life-forms.

The implication is clear. If we find small invertebrates on Mars, including insect-like creatures, nobody should be at all surprised.

But Percival Lowell made people greedy when Mars is mentioned. They will accept the possibility of a low form of plant life on the Moon with interest or even with pleasure, since they expected to hear no such thing—they've been given something for nothing. But they shrug off the virtual certainty of plant life, or the possibility of insect life, on Mars with impatience. They're holding out for intelligent life. Lowell gave them that, for a little while at least, and nothing less will satisfy them any more.

Dr. Lowell was a great man, a careful observer, and a major discoverer in astronomy, and he made it impossible to talk about Mars without discussing those "canals", which he took to be clear evidence for intelligent life. Furthermore, he made a very good case within the limits of what was then known about Mars; some of his points still stand.

There *are* mysterious markings on Mars, which people still persist in calling "canals." Lowell thought that they were real canals, built by Martians to carry water from the poles to irrigate Martian fields; he visualized the whole network as a vast engineering project brought about by a race fighting to conserve a dwindling water supply, and concluded soberly that the Martians, despite all they might do, were doomed to lose that fight. The picture was poetic—Lowell, unlike many scientists of his stature, was also a brilliant writer—and it seemed to fit the facts.

Now that we are sure that there is little or no liquid water on Mars, we have had to give up Lowell's idea, at least in large part. And observing the canals, let alone photographing them, is such a ticklish business that many astronomers will tell you with a straight face that there are no such things.

Underground Cities?

The ins and outs of the canal controversy are complicated and just a little bit dull to the layman; furthermore, most people who have any curiosity about Mars already have boned up on the main course of the argument. For the moment, then, let's stick to the observed facts.

Probably the canals are not as mathematically straight as Lowell drew them; probably, also, he drew in many which were just products of eyestrain. (There is on record a marvelous "map" of Mercury onto which the overtired astronomer had conscientiously drawn

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some of the blood vessels of his own retina and the diffraction patterns of his telescope.) But about fifty of these markings on Mars have been seen and drawn so often by so many independent, sceptical observers without axes to grind that there can be little doubt about their existence. Some few of them even show on photographs, though without enough definition either to confirm or to controvert the details pictured in the various drawings.

Were these long, wide markings across the face of Mars the result of work by some intelligent hand?

Here we shall have to apply, once more, our rule of sticking to the most likely answer. It is perfectly possible, if the latest theory (Dr. Harold C. Urey's) of planet formation is correct, that there was once intelligent life on Mars, billions of years ago while the planet still had seas. It is even possible that there is still intelligent life there. But, unfortunately, there is a simpler explanation which accounts for all the observed facts.

Consider, first of all, that there were rivers on Mars, almost beyond doubt, if there were seas. And there were other, smaller water-courses. There were lowlands which the rivers cut. The river-beds and the canyons will remain after the water has gone.

Secondly: when spring comes to a hemisphere of Mars, a movement which Lowell called a "wave of quickening" rolls down the canals from the polar cap. This wave, which has been observed by other astronomers also, travels about two miles per hour, according to Lowell's reckoning. Lowell thought it represented plants perking up and turning greener as the water reached them—because he thought that the water in transit was a liquid.

If we suppose, however, that the "wave of quickening" is not a plant response to water, but the water itself, in the form of vapor, we get a more likely picture. When spring comes to Mars, the polar ice melts and soaks the ground. The dry air quickly snatches up this moisture, changing it to water-vapor; and the vapor, sticking to the low ground, rolls away from the poles along the ancient water-courses. Vapor, like water, collects in low areas. The water-courses darken, both with the light-absorption of the vapor itself and with the more gradual coming-to-life of the plants rooted in the silt.

During the winter, the water-courses will be visible because their silt bottoms are darker than the sands of the surrounding highlands; but they will not look as dark as they do in summer. This is, as a matter of fact, just how they do look from here.

At night on Mars, even in summer, all the water-vapor would be frozen out of the air, to be deposited in the channels (literal meaning of "canali") as hoar-frost. When the sun comes up again, the vapor would be restored to the air, in the form of a foggy mist, still clinging to the ground. The vapor would resume its march into the big green areas, bringing spring to the Martian vegetation.

This concept, if you'll pardon the pun, holds water, and a number of astronomers are now willing to say cautiously that it is "quite likely." It's rather a disappointing idea, for, though it acknowledges the existence of the "canals," (as it must, considering the photographs) it virtually rules out the chance that these markings were constructed by intelligence.

And yet, there is life on Mars, that much we know. If there ever was intelligent life on Mars, it should have survived the progressive loss of oxygen and water, unless it misused its intelligence with the determined insanity we've been displaying in the last century or so.

We know that there are no large cities on the surface of Mars, for if there were, we could see them from here. However, conditions as they stand at present on Mars would make underground cities more sensible than surface ones, for underground the air pressure would be

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higher and the fluctuations of temperature much less, even without any attempt on the part of the Martians to control these factors.

There is, however, one process which is taking place on Mars which no local control can halt. That is the loss of Mars' atmosphere, oxygen, water-vapor, and all. The planet's velocity of escape is 3.1 miles per second. At that rate, and at the noon summer high-point of Mars' surface temperature, the atmosphere is leaving the planet, slowly, but ineluctably. And an atom of oxygen which has escaped into space cannot be recaptured or replaced; eventually, even the oxygen stored in the rocks will be lost, not very long after the hypothetical Martians have freed it for breathing.

The Unexplained Explosion

It would be perfectly possible to crack the rocks and release that hoarded oxygen, just as we could extract oxygen from the rocks of Arizona's Painted Desert. Indeed, ferrous Mars, the iron dwarf of the solar system, must have a tremendous quantity of oxygen locked up in this fashion, requiring only a knowing hand to return it to the air. If such a process were being worked on Mars, we would not be likely to see it, for the total effect would be too small, especially if most of the gas thus produced is being put into a sealed, re-circulating system.

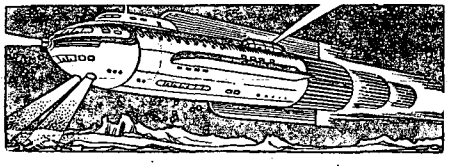
There is no evidence against the assumption, at least.

The question of intelligent life on Mars, therefore, remains very precariously in the balance. These is no reason why it should not exist, which is in itself a pretty big statement; and about Mars there are many mysteries still to be fathomed. Recently, for instance, an enormous explosion has been reported, on Mars, a planet which cannot very well be volcanic enough to make the vulcanism noticeable from here. A massive meteorite? Or—an atomic blast? Or was the "explosion" just a trick of the eye? The report, like thousands of others about Mars, leaves us free to speculate.

Incidentally, in 1956 we will have available a new series of photographs of Mars, to be taken on motion-picture film by one of the instruments at Mt. Palomar, probably the 48-inch Schmidt telescope which has been overshadowing the 200-incher lately. Both the 200-incher and the Schmidt have enormous light-gathering powers at interplanetary distances, and both appear to make possible an instantaneous snapshot of Mars. By taking such pictures 10 or 20 to the minute with a movie-camera technique, the Palomar astronomers hope to get at least a few good, clear stills, richer in detail than any photographs of Mars ever obtained before. Such photographs may well answer for us many of the questions about the iron dwarf which we have been asking ever since Schiaparelli first reported his "canali."

The date, 1956, is fixed by the fact that we will be making our next close approach to Mars during that year. By the time those five years have passed, however, we may not need the movie technique; we may be looking at Mars from the Moon, where even a quite small telescope will give us better "seeing" than the Palomar instruments can.

It is even conceivable that some day Earth men may well be walking the surface of the iron dwarf itself.



Next Issue: OUR INHABITED UNIVERSE, Part V—Exploring the Asteroid Belt

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ESCAPE FROM

She had a tire iron with which she slashed blindly

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HYPER-SPACE

Bill Corbin stumbled into a space-crack— and into feminine arms alien but tempting!

A Novelet by E. HOFFMANN PRICE

I

SUNSET GLOW, enhancing the copper glint of Marcia's hair, overlaid her smooth skin with a rosy patina. It gave, by contrast, depth and darkness to her greenish eyes. The Arizona desert's magic gave Marcia every advantage, and so did the hostess gown she wore as she stretched out in the chrome and plastic chaise longue of the sun parlor overlooking the recently completed installation set up to investigate space curvature.

Marcia's curvature was strictly tridimensional, and her mind at the time went no further than domestic science, and an installation for her and Bill Corbin. He had been talking about such a project for a long time now, but mainly

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in terms of obstacles.

"Oh, Bill, will our wedding be on the day we qualify for the old-age pension? Let's take our chances! You've been promoted twice by Kosmic Associates, and you've won that fellowship, and now there's this project! After all, the only real security is death, and I'd rather be alive and gambling."

Bill Corbin, as far as his mind was concerned, agreed heartily. He was tall, rugged, and looked as if grappling with a Numidian lion was his idea of light exercise. He had keen eyes, craggy features, and a purposeful look which would have kept him from winning any beauty contests. He readily won, however, the confidence of everyone but himself.

Corbin's scientific precision was actually an expression of his obsessive demand for established security. He was afraid of a world which had become increasingly insecure. However, Marcia's voice and presence tempted him. For a moment he wavered. She held her breath. Then realism, Corbin's idea of realism, counterattacked. He glanced at his watch, wiped the lipstick smudge from his face, and stepped to the door. There he paused to say, "I'll see if I can get Gale to commit himself as to how long this project will last."

"I'll be sitting up late, darling," she said. "Stop in for coffee."

Whenever a coyote howled, Marcia shivered and enjoyed an ecstasy of horror at the ghoulish cry, being quite sure she was safe. And the eerie sound made her more avid for kisses. Corbin would be back.

But as he left, Marcia's slow, speculative smile promised more than arms and shoulders whitened by moonlight. One more jolt would crack Corbin's mania for security. Marcia, certain from the first that Lester Gale's scientific methods extended to women and the practical things of life, had decided that his maneuvering for her favor could be used against him.

Lester Gale, Ph.D., Sc.D., had been very happy about Marcia's coming to Wittenburg to stay with friends, only forty miles from the installation, in order not to be separated from Corbin. Gale, the director of the project, had wangled a job for Marcia, as statistician. He had done this as soon as government funds had permitted air-conditioned living quarters for employees. However much Gale may have fooled Corbin, he had fooled Marcia not at all. Now she saw her chance to make Gale serve her most important purpose.

Corbin, setting out afoot for the installation, looked out over the desert, and at iron purple peaks rimmed as with liquid fire. The steel towers of the transmission line made black patterns against the sullen red of the sky. They dwarfed the grotesque sahuaros which raised multiple arms, in quasi-human semblance. This was empty desert, far as the eye could see, yet of a nature other than that of normal space.

Months previous, Kosmic Associates, Inc., had sent Corbin to find out why the geodetic survey was going haywire. It had been a terrific blow to his already crumbling sense of security when he was compelled to recognize that only an abnormal curvature of space would make theodolites and Invar tapes perform so inconsistently. The government thereupon took over, which resulted in an Authority, and a Project, with Lester Gale as director.

A 220,000 volt power line from the hydro-electric plant at an irrigation dam, a hundred miles away, furnished energy for what had become the main object of the project: to apply electromagnetic force to demonstrate the unitary field theory by modifying the existing space warp.

GALE was still on duty when Corbin entered the installation. The chief had a beaked nose, and angular features. His eyes were deep set, under brows as black as his wiry hair. His presence was sufficiently dramatic for him to dispense with the gestures and

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poses of showmanship. He looked the part he played.

"Watch out for dielectric failure, Bill," he warned, and sniffed the acrid air to point the advice. "Can't cut in the next stage of amplification till we're sure the insulation can take it."

As Corbin went with Gale to make the rounds of the inductances and capacitors which kept each other balanced, there were queer stirrings in the very center of his brain. These were not response to the hum of laminations. If anything, they were his reaction to the interference beat of the magnetic resonators which amplified the impulses.

The regenerative principle of the old-fashioned radio heterodyne was used. Successive magnetic impulses, achieving resonance, delivered an impact thousands of times more effective than could all the power fed in through the heavy transmission line.

For a moment, Corbin and Gale paused to watch the electrical brain into which statisticians were funneling data from the survey.

Day and night, crews in the field remeasured the base line. Those with theodolites read angles of the base triangles, and of each successive triangle, all the way to the outer limit of the survey net. The observations were sent in by radio.

These data, punched on cards, went into the calculator. The electric brain whirred. Pilot lights blinked. The note of gears and solenoids rose in pitch.

Gale snatched the printed record.

"Error's getting bigger. It's now fifteen seconds of arc on the primary. Forty seconds on the secondary. One minute and nine seconds on the tertiary net. We're changing the curvature of local space."

The instruments at the primary space were changed by the local curvature. Thus, no comparison scale brought to that spot could help. It would be altered, in relation to local space. But the outer nets, thirty miles distant, were not changing at the same rate. It was this difference in change which gave the clue to the curvature. It suggested that what appeared to be open desert, with the normal three dimensions, contained a four-dimensional continuum: with time, in either case, the final additional dimension.

Gale nodded contentedly. "Frankly, I have been worried. Suppose it had not turned out this way?"

"Two of us would be permanently looking for jobs," Corbin answered, with horror that came right from the central core.

By impressing magnetic force upon the region, they were doing more than merely altering a previously existing space warp. They were demonstrating that Maxwell's equations did coordinate with those which Weyl and Eddington had developed as the basis of the unitary field theory: space, time, gravitation, magnetism, interchangeable and equivalent, not on paper, but in actual fact.

"What," demanded Corbin, "will happen when we cut in the final stage?"

Gale gave him a patronizing slap on the shoulder. "The crack in space won't be big enough for the installation to fall through. Doubt even if there'll be an earthquake! Be seeing you."

ONCE his chief left, Corbin resumed his rounds of supervision. The reports had left his brain all awhirl with non-Euclidean geometry. The world tensor, under Eddington's system, had a symmetrical component which included space, time, and gravitation; its antisymmetrical governed the electro-magnetic. And now, electro-magnetic impacts were acting on the time-space-gravitational field thus far held to be unrelated to the former, except in remote theory. He tried to visualize the hyper-space which was being warped.

He began with the tesseract: a four-dimensional solid consisting of eight cubes so joined together as to inclose a portion of hyper-space—and identical, except for the extra dimension, with the way six squares inclose the cube, any

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cube at all. Each cube, in four-dimensional space, would be joined to the others by its six square faces. The whole process of visualizing was to picture these cubes so related, locked together and of different sizes when viewed tri-dimensionally, but separated and all of the same size when viewed in hyper-space.

There was something stimulating about the vibration frequency of the entire installation. For an instant, he had almost "constructed" the tesseract; but he backed away from the verge of success.

"Blow my damned head wide open, if I'd succeeded," he grumbled, wryly, and went to examine the next set of calculator reports.

Returning to the master panel, near the poles of the resonator, he noted that the glass bays of the building were shimmering. Blurred images appeared. He closed his eyes, put the heels of his hands against them, cupping the eyeball. He bathed his eyes, and went back, refreshed. The images were less blurred. There was motion, and where none should be. He pounced to the intercom phone, then drew back.

"Let Gale do his own finding out!" he muttered.

Corbin put on his jacket and stepped out into the desert chill. He would instead give Marcia a first look. He would say nothing, and see whether she saw anything odd about that window.

He would surprise Marcia.

Which was precisely what he did.

It was much nearer midnight than Corbin had realized in his preoccupation. Since she had said she would be sitting up late, he had, way back in his mind, the imprint of her words. Preoccupied with composing the casual invitation which would avoid warning her that something unusual awaited her reaction, he barged into the solarium. He had no thought of knocking until he got to the inner door.

But the solarium was occupied.

The geometry of the two on the chaise longue was symmetrical and non-Reimannian. Marcia was being thoroughly kissed. Whatever she murmured, it was not an equation. Then she let out a yeep, and Gale bounced up from the clinch.

"What the hell do you mean?"

Corbin's reflexes were perfect. In a flicker, Gale was down, and trying to unscramble himself from a smoking stand. Marcia was on her feet, and smoothing out her robe.

"Get on your feet, you meat head, and keep your hands off!" Corbin shouted.

Marcia intervened. "Oh, Bill, don't! It was just one of those impulsive things. It doesn't mean anything, darling. Don't, he'll fire you for sure," she added, being certain now that she had finally goaded him into recklessness.

"Then I'll get my money's worth," Corbin countered, and moved in to make a job of smacking Gale around the place.

Having achieved her purpose, Marcia clung to Corbin, hampering him, and pleading for both to keep what heads they might still have.

Gale, unsteady on his feet, blinked and said, "It seems we are both off base, Corbin. Marcia is quite wrong. I shall not dismiss you. Let us keep this between ourselves."

Corbin said, "That's decent of you. We were both off base."

Marcia exclaimed, "Oh, I never imagined it was so late!" But she had a contented expression; she felt better, having seen it so clearly proved that something could make Corbin forget security. Being that something gave her a splendid inner glow.

Yet she was sorry Corbin had not been fired. Once he found the process painless, he would be freed of his phobia.

Gale said, "Marcia, why don't you go with me and Bill to the installation. There will be—ah, something notable to see."

"You saw?" Corbin demanded. "The windows?"

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Gale nodded. "I hesitated to tell you. For fear that you'd be influenced by suggestion. It had me keyed up as though I'd been drinking. I'd like to have Marcia join us. She has a more detached viewpoint."

THIS, Corbin told himself, as the three went to the installation, was his superior's attempt to make amends, to apologize, to explain. Corbin, remembering his own excitement, realized how surmise and incredulity, evoking so much more than one could express, would make it natural enough to grab an armful of congenial women as an outlet. The whole business was beyond the scope of rational science.

Presently, Marcia faced the glass bay. "I do see something," she declared. "But all hazy. And the perspective is wrong."

"Maybe," said Gale, "it is a form of mirage. Magnetic impulses reflecting from the mountains, and activating some constituent of the glass. With some of the geometrical solids actually illusion."

Corbin stepped up between the poles of the resonator, at Gale's suggestion that the overhead fluorescent tubes might be contributing something to the odd pattern of terrain and architecture. When Marcia would have joined him, Gale laid a detaining hand on her arm.

"That glass may be under electrostatic stress," he warned, and then, "Bill, I'd not get too close."

Corbin had the feeling that gravitational pull was changing. He had the sensation of leaning; the perpendicular to which he was accustomed seemed to have shifted. He became light-headed. He was about to draw back when there was a blinding flash. At the same time, he had sensations of intense cold, and of biting, dry heat.

For an instant, there was an intolerable pain in his head; a pain he could only describe as unphysical. For a split second, the four-dimensional tesseract took shape in his mind. He wavered, poised as on a razor-edged bridge that spanned an abyss of space.

Then came a period of consciousness without any sense perception. He had no awareness of anything except undifferentiated *being*.

II

WHEN Corbin's senses returned, they were crowded to the cracking point. Instead of desert, the country about him was verdant. The peaks which loomed up had recently been active volcanos. At least two were definitely alive, fuming and rumbling.

The light wavered. It was as though the sun, though haze obscured, emitted light in jerks. But for retinal persistence, there would have been alternations of illumination and darkness.

In the distance he saw architectural forms, apparently of masonry. High over these, several disc-like constructs were in flight, some progressing, others hovering. They had a steel-gray, metallic lustre. From the peripheries came jets of flame, as though propulsion was by rotation in the manner of a Fourth of July pinwheel.

Corbin got to his feet. Looking about him, he noted fresh rifts in the dark face of a rocky outcropping. There were cracks in the earth. He felt a perceptible quaking. This did not abate as he set out for his logical objective, the distant towers.

A trail led in their general direction. Judging from the breadth and depth and character, a sled with metal skids had marked the way.

The vegetation, he decided, was not semi-tropical. From the corner of his eye, he saw a vivid flower of unusual shape. Though not parasitic, it reminded him of an orchid. He turned for a better look. The outlines dimmed and blurred.

"My damn eyes," he muttered, and reached to pick the flower.

He missed. His fingers were deft as joints of sewer pipe. He over-reached.

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He fell short. It was like trying to pluck a gnat out of the air. Grimly, he kept at it.

When at last he succeeded, all he had was a smudge of sap and stain on his fingers. He had no better luck in picking berries which grew further along his line of march. He dismissed a gravitational change as the answer. It was something else.

Picking up a pebble was difficult, yet it took fewer trials. Reaching for a fist-sized rock was successful at the first attempt, though he had the impression that the chunk was going to leak through his fingers, somewhat as if he had got a handful of wheat.

Nothing was precise. Intently eying any fragile leaf made it blur, and apparently shift position. It took some while for the significance of all this to register, and when it did, overwhelming depression beat him down. He seated himself on a rock and stared for moments at the earth at his feet. He had been translated into a cosmos alien to the one he had always known—and there was no way of return.

Planck's constant, *h*, was different here than in any place in the universe which any terrestrial scientist had studied. "Interaction between force and matter," Corbin said to himself, by way of amassing his thought for use, "takes place not continuously, but in a succession of increments—shocks, jolts, packages, so to speak. Planck's constant on earth is about 6.547x10-27 erg-seconds. No practical effect at all until you're dealing with particles of the mass of electrons."

Lecturing to himself, spreading out the basic facts, helped restore his balance, so he continued, "You can not determine the position of an electron with a precision any closer than the diameter of the electron's orbit around its nucleus. The wave, whether light or otherwise, used for observation changes the position of the mass. If you apply less than such an amount, less than a quantum of force, you get no observation at all."

He fumbled in his pockets. Among other familiar things, he found his miniature slide rule. Rough estimating on the basis of the mass of the things he had tried to grasp, he concluded that in this continuum, *h* was something like two hundred thousand billion billion times as great as in the space he had left. In other words, *h* amounted to one erg-second, or maybe more.

Things began to make sense, in a dismaying way. His attempts to handle light objects put him in mind of trying to focus a microscope which lacked a fine adjustment; the most delicate fingering either had no effect at all, or else, there was too much motion, and the point of focus was overshot. The quantum of energy which the human hand could deliver, the smallest parcel it could convey, was far too heavy, unless the instrument had a fine adjustment screw.

Far off to Corbin's right was an enormous device which looked like a Bessemer converter. It tilted on trunnions, so that its mouth pointed at the face of a ridge of black rock. Flame poured from the mouth, and lapped about the rock, which was glowing, and flowing away in a sluggish stream. Burning vegetation marked its course.

Corbin could just distinguish the human shapes of those who operated the device. That they were human relieved him of his worst apprehensions. And curiosity as to the reason for melting down a spur of a mountain range made him forget his own plight for a moment.

PRESENTLY, he came to a place where the sled track followed the edge of a water course. Trees shaded the bank. There was an inviting splash. It suggested both a drink and a swim. He could do well with both. And as he neared the bank, he saw that he was not the only one who had been attracted by the stream.

A pair of small red sandals and some neatly folded garments lay beside a basket of berries at the foot of an overhanging tree. Corbin glanced about for

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a spot where he could wait until the lady had dressed before he accosted her.

He had little time to wonder about the women of hyper-space. From the brush and rocks between rim and water's edge came a scream, blended with a savage snarl. There was a flash of orange colored fur, black spotted. A leopard lunged from an overhanging limb. A rattle of rocks followed, and a growl. Judging from the human cry, the animal had missed.

Corbin bounded to the edge. The girl, red-haired as Marcia, well shaped, and white of skin, picked up a rock and heaved it. Though she missed, the crouching leopard hesitated, all the while grumbling deep in his throat. While no larger than a Mexican ocelot, it was nonetheless a nasty package. Corbin snatched a chunk of deadwood and jumped. The cudgel, none too handy, was heavy as ironwood.

The girl and the leopard were equally surprised when Corbin landed. The beast's eyes sharpened. The whiskers twitched. The tail-lashing became slower, and rhythmical, as the animal gathered himself for the attack.

Before Corbin could move, the leopard had leaped, a ninety-pound projectile. It grazed his shoulder, knocking him off balance, but without throwing him. He whirled before the spotted devil could recover, and lashed out with his club. Though the blow should have flattened the animal's skull, there was no perceptible effect.

But for the animal's uncertain stance, Corbin would have gone down at the next charge. Instead, he struck again, and uselessly. It did not at the moment amaze him that he understood the girl when she cried, "Keep on hitting! Keep moving, keep doing something! Don't stop!"

Dismayed, winded, and bleeding from scratches, Corbin did not know what to make of her frantic advice until it came to him in a flash—the leopard had no more precision than did he! Corbin charged, flailing his club. The girl threw rocks. There was a tangle of cudgel and fur and Corbin. The animal rolled. Corbin landed headlong amid brush and stones. He had lost his weapon.

"Keep moving, you've got him!" the girl called. "Do something!"

He snatched a stone no larger than his fist and heaved it. The missile barely grazed the leopard. The animal went limp.

The girl knew then that the fight was over. Hair streaming, she darted up the bank. By the time Corbin recovered sufficiently to clamber after her, she had put on her tunic, and was binding up her hair.

"There are so few leopards left," she remarked. "Still I was an idiot for wandering out such a distance." Then, after a speculative moment during which she regarded Corbin with as much approval as curiosity she went on, "You're a stranger."

"Well, rather! It's hard to explain, too."

[Turn page]

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"Oh, it happens every once in awhile. In fact, all of our people felt out of the sky."

"It's odd that we speak the same language, isn't it?"

"No, it isn't. A couple of red-faced men came here, a long time ago. They took charge, told us how much better their way of doing things was, and taught us their language. Ours was so much easier, but they couldn't think of trying to learn it. Bloody barbarians, they called us. Probably we were."

"Has anyone ever left here?"

"Our scientists either haven't discovered a way, or else, they're keeping the information to themselves. After all, why'd anyone want to leave?"

IF LANI, as she called herself, was typical of the women of hyper-space, there was a good deal of sense behind her query. She had fine features, with just enough irregularity to make them piquant. Her voice was low-pitched, caressing and restful. For all the aliveness of her greenish-gray eyes, and the agility of her brows, her vitality was not of the exhibitionistic sort that Corbin had always found so irritating. Being wholly alive, she did not have any need to prove the fact by shrilling and burbling and fluttering.

After that entirely satisfying appraisal, Corbin asked her about his battle with the leopard, and his odd experience in picking berries.

Lani laughed softly. "That's what told me you were an outlander. It wasn't your clothes. In our country, an object is never really all in one place, unless it is awfully massive. It is mostly here, but partly there, and also, somewhat over yonder. You'll get used to it, though it has driven a few outlanders raving mad."

In a surprisingly few and simple words, Lani confirmed Corbin's suspicion: that, in the terms of science, the quantum constant was fantastically large. Thus, each of his blows in the battle with the leopard had been an increment of force which had no effect until the repetition had amounted to enough to deliver a killing impact.

In principle, it was as with wave phenomena: while the wave front, ever expanding, and so diminishing in intensity, might reach a billion or more electrons, only one of all that number responded. It was like rolling dice, or pulling the lever of a slot machine. But here, that same principle of indeterminacy applied to objects enormously larger than electrons.

They were near the city when Corbin pointed to the fumes and glare of the device that spewed flame against the now distant ridge of rock. Lani explained, "We've been having a lot of trouble, just the past few days. The curvature of space is changing. Anyway, that's what the Bureau of Science tells us. So they're rearranging masses of ponderous matter. That's supposed to make space curve back the way it should."

And by the time they were in the city, Lani had given Corbin so many practical hints that he felt that he had a fair chance of surviving in that nightmare of unprecision and insecurity. Better yet, he might learn from the local scientists how to get out of hyper-space. And his first project, on returning to Arizona, would be to corner Lester Gale and raise his energy level—by about n-plus-one pokes on the chin.

Corbin learned, for instance, that people from time to time got into hyper-space without any artificial aids. Apparently, some natural force, such as earthquake, lightning, volcanic eruption, would cause a space-crack which admitted outsiders. Lani, who worked for the government as a clerk, repeated her assurance that no immigrant had ever left.

"How do you know? Don't people disappear from here, the way I've just vanished from my world?"

"Well, yes," Lani admitted. "It has happened."

"Then how do you know they didn't

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find a way back?"

Lani shrugged. "In almost every case, it's found later on that those who vanished had joined some of the outlaw bands that make some sort of living in the waste country. The disc patrols keep as close a watch on them as possible."

"Then those weren't warcraft I noticed?"

"There's nobody to have war with. All we know of war is from tradition, and stories brought in by people like yourself. Don't look so worried, Bill! Except for the few who go wild and join the outlaw bands, immigrants love it here. They wouldn't dream of going back. And neither will you. You wait and see!"

III

CORBIN'S first glimpse of the crowd convinced him that this corner of hyper-space would be a married man's paradise. The concept of style was nonexistent. Each dressed according to his or her fancy. There was apparently not the precision nor mechanization of thinking that was required to make people style-conscious.

With such a degree of non-uniformity, Corbin was not amazed to note that the streets were patrolled by watchmen. They were armed with devices resembling submachine guns, except that the muzzle flared in the manner of a 17th-century blunderbuss. This made sense; it was by now obvious that a rifle bullet would be useless, whereas a scattering of slugs had the off chance of hitting the target and boosting its energy level.

"You must be hungry," Lani resumed when she noticed that his glance strayed toward market booths. "Here's the government restaurant, and across the street is one of the government lodging houses."

The food was pretty much as in his own space, though some of the vegetables in the stew were strange. It was not until Corbin had eaten, and Lani was making for the street, that he got his next bit of education. "See here," he asked, "how will I pay for this? My money wouldn't be any good, would it?"

"Oh, you don't pay till you're asked to."

"Who does settle for our check?"

"The state just picks on someone by chance, and he pays."

"For something he didn't get?" Corbin demanded, aghast.

"It averages off," she assured him. "It's really awfully scientific, doing it that way. One of these days you'll be paying for maybe a thousand or so of someone else's meals. That's a lot more efficient than having to dig into your pocket after each meal."

"Suppose I couldn't pay the bill?"

"Then you'd work it out. In the quarries, or the baryllium mines, or the refineries."

Before he could ask about beryllium —the color of the flying discs suggested that they were made of that metal—a yell and a commotion in the street interrupted. A man was running. Darting, ducking, weaving, he eluded all who tried to stop him. He clutched a small leather bag which had a carrying strap. Judging from the outcries, he was a thief. Watchmen came pouncing from alleys. They levelled their curious weapons. On the run, they fired into the crowd. Smoke blotted the scene for an instant.

Corbin felt as though he had been slugged with a caulking maul. There was no pain. He was certain that none of the whistling pellets had nicked him, yet he dropped. Closing in, the watchman yanked him to his feet.

"You're under arrest."

"What for?"

"Stealing."

"I didn't steal a thing. The thief got away."

The owner of the bag kept yelling, "I want my money! Arrest someone."

"You know I didn't take your purse."

"Arrest someone!"

"I can prove by my friend that—"

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"What friend?"

Lani had vanished in the excitement. Corbin, hustled along by his captors, wasted no time speculating on the curious weapons they carried. In terms of the quantum theory, he could all too readily appreciate why he had been arrested. He was in precisely the situation of one of the electrons he had in the laboratory blasted from its nucleus. The painful difference was that an electron didn't care what happened to it.

THE MAGISTRATE seemed kindly and intelligent. He wore a red tunic and a curled wig, probably a scrambling of the British influences. His seamed and weathered face had quirks of humor at every angle. For a moment, Corbin took heart, and listened to the patrolman recite, "The prisoner stole a purse containing two million pazoors."

The accuser was shouting the very same charge.

"Your Honor," Corbin began.

"Duly arrested," the patrolman carried on, "in accordance with . . ."

The gavel rapped, cutting him short. "Flog him," the court ordered.

A squad took Corbin to the plaza, where they securely triced him to a whipping post. A solid fellow stood by with a cat-o-nine-tails. He gave the scourge a whisk and a snap. The sound was ominous.

"How many?"

"Raise his energy level to the next stage."

Corbin heard the hiss of the whip, and the explosive exhalation of breath. The one with the tally sheet sang out, "One!" But Corbin felt nothing at all except apprehension.

"One it is!"

Another hiss and whack. And, no perceptible impact. Flinching anticipation became as painful as the blows should have been. Corbin wondered how the man could have missed.

"Two!"

"Two it is!"

And as the unfelt blows were tallied, the truth came to Corbin—finally there would be a stroke which would contain the accumulated effect of all those which had gone before. The graze of a pebble, he recollected, had been the leopard's finish.

A man waving a sheet of paper came running up. Lani was at his heels. "Wait, wait!" she cried. "Orders from Imbro!"

"Hold it!" the tally man called.

He glanced at the document. He spoke to the squad of police. One cut Corbin's wrist and ankle bonds. Two others dashed after the crowd, which had bolted in sudden panic. A man stumbled. They seized him, and triced him up. Apparently Corbin's trial had sufficed for the impromptu substitute. And as Corbin went with Lani and the courier, the tallyman called, "Six!"

Lani said, breathlessly, "Lucky I work for the political bureau."

"Why the devil would anyone steal, when you get meals at someone else's expense?"

"Money," she explained, "is surplus energy. For luxuries, you know."

"That makes it better," he said, grimly. "At least I won't ever be stuck for some unknown woman's mink coat."

"Now you're catching on. The only way I'd ever have any luxuries, like jewelry, or whatever kind of coat it is you mentioned, would be if I earned it myself. Or if someone who liked me an awful lot would buy it for me."

"Who's this Imbro who saved my hide?"

"He's the Prime Bureaucrat."

"What's a Prime Bureaucrat?"

"Well, first, or head."

"How many do they have?"

"You mean, just all kinds?"

"That's right."

"There's a vice-bureaucrat for each day in the year, so the Chief won't be overworked."

"On duty one day a year, they hardly would be."

"Oh, each one has a lot of assistants. We have to have so many of them. To

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keep track of our way of paying for things."

"To say nothing of running the crime and punishment department. But where are we going now?"

"We're going to see Imbro. Strangers interest him. He always interviews them. Unless he's awfully busy."

CORBIN was in a spacious office of the masonry tower which housed the administration. Imbro had a squarish, benevolent face. His eyes were those of a philanthropist; and his winning smile matched them. However, it was the voice which carried the ultimate charm. Here was a man who could quell revolt by reciting the mutiplication tables, or selling fuming nitric acid to a man perishing of thirst.

For a moment, Corbin had told himself that behind that benignant front was a self-centered autocrat who enjoyed his pretense of loving the rabble. Then he was ashamed of his suspicion. He could not help but respond to the greeting and the handclasp. Of a sudden, Corbin felt that the craziest tricks of hyper-space were, somehow, sane and right.

Before he could wonder whether to say, "Sir," or "Your Excellency," he learned that no formality was required. One of Imbro's staff brought a decanter of liquor. Another came with triangular wafers flecked with aromatic seeds. A third set a bowl of grapes, apricots and mulberries on the table.

"Help yourself, Bill. You, too, Lani." Imbro stepped up the benediction of smile and voice. "Call me Imbro, for short. Well, well, now, what have you people been doing? On your side, I mean."

Corbin sketched the electro-magnetic processes in the simplest language at his command. He had the feeling that Imbro had not the foggiest notion of what it was all about, yet the man nodded and beamed his appreciation.

"So you're a scientist? Thing for you to do is get an interview with the Bureau of Science. Splendid chap by the name of Asbal is head. You'd better hurry and make a connection. Otherwise, our usual principle of indeterminacy will take charge, and you might find yourself doing manual labor."

"I ought to get back to my project in Arizona."

Imbro shook his head. "I am sorry, awfully sorry, most sincerely and deeply sorry," he said, and somehow got Corbin to the verge of tears for having brought such sorrow upon the man. "But it is against public policy for anyone ever to leave. There probably is some young lady who will miss you. That is the sad thing about it. But I see that you've already done much better than the average involuntary immigrant."

"My return is actually a matter of obligation," Corbin protested.

"If you went back," Imbro pointed out, "you'd become homesick and want

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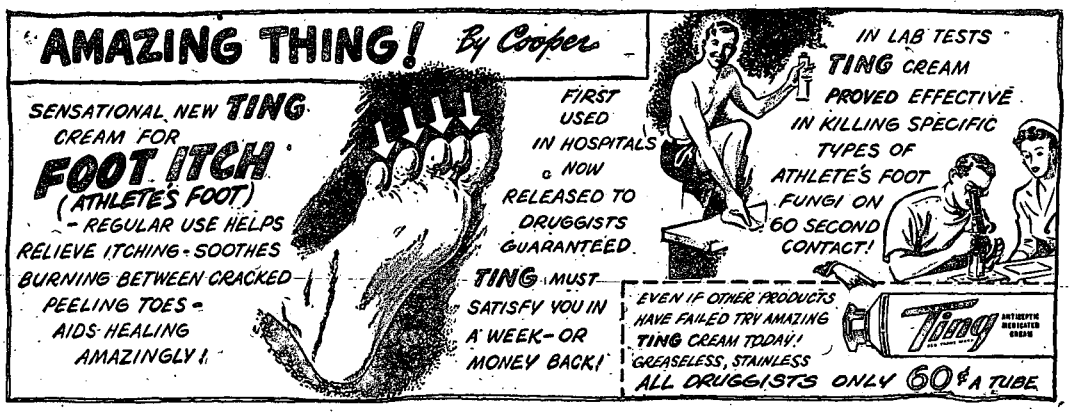
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to return. And with such a project as the one you've been working on, you'd be able to do so. You'd be followed by many of your fellow citizens. You folks as individuals are not bad. Most of you make fine citizens. But you are all so herd-minded that if any number of you arrived in a drove, your worst qualities would take charge, and the best would be submerged."

And with that, he graciously dismissed Corbin.

As they left, Lani said, "Bill, there just is no going back. If you are even caught acting as though you were thinking of inventing a way, you would be taken out to have your energy level raised a few stages."

"Then what'd happen?"

She shuddered. "You'd leave here. But you'd not go anywhere else. You'd be atomized or ionized. It's spectacular as a volcanic eruption. And if you can't take my word for it, why not talk to Asbal? He'll put it into the sort of language you could appreciate."

IV

AS A SCIENTIST, Corbin was received with great interest. Asbal, a long-nosed, narrow-faced man with shoulder-length hair, concluded the interview by taking him to the flight station. The chassis of the discs, as Corbin had suspected, were of beryllium alloy. The rotating rim, which floated between flanges of the body, carried vanes operating on the helicopter principle. Repulsion jets produced the rotation.

"Synthetic fuel," Asbal explained. "It's piped from the volcanos, processed and condensed. Our economy is chemical rather than mechanical. You've noticed the wide clearances in what few rotating parts our machines do have. Reciprocating engines would not function. No piston could be fitted to retain pressure. And manifestly, turbines are out of the question."

The roar of the jets and the whine of the vanes made further words impossible until their disc was well over the city, and streaking out over the open country. Lifting an observaton port in the floor, Asbal signalled for a hovering descent.

"We're over the beryllium refinery."

"Hot electrolysis?" Corbin hazarded, noting the fuming vats. "How do you generate the power?"

"Thermo couples. Each volcano is a powerhouse."

And as they moved on to the open-cast mines, Asbal explained the power transmission system which fed the city. Presently, hovering again, they were low enough for Corbin to get a good look at the pinwheel rotors which actuated a device something like a windlass, its drag-lines pulled the scrapers in the pit. Other cables moved sleds of ore to the refinery.

Further along the circle which would finally bring them back to the city, Corbin observed how pinwheel and capstan arrangements operated cable-drawn farm implements.

"The last immigrant," Asbal continued, "told some monstrous yarns about the degree of precision in your world."

"He was probably right. When we get back to the laboratory, I'll take my watch to pieces and let you see for yourself."

"We'll put it in the museum. Along with the other things that have come to us. While I think of it, there's an odd construction that just fell into our space. A four-wheeled device, probably for carrying passengers."

Further description made it clear that someone's car had fallen through a space rift. And Corbin told himself that a glance at the registration papers would give him a useful clue as to the extent, in terrestrial terms, of the gap in space.

Once back at the bureau, Corbin got closer to the real workings of the institution. A large part of Asbal's staff was busily engaged in calculating the total mass of the continuum, and the

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distribution of it, so that by making suitable shifts of molten rock, the curvature of the continuum would change to a more stable shape.

"We don't have your operational precision," Asbal went on. "But we can fuse a mountain and flow it into the areas indicated by the coordinates of this chart. And then we have a permanently established curvature. Relatively permanent, you understand. Whereas, if the power on your side were cut off, you couldn't make an impression."

By now, Corbin had a glimmering of hope. There was a fighting chance of escape.

"I gather," he said, with a touch of challenge in his manner, "that our electro-magnetic impulses have put you to the trouble of fusing part of a range. Our way is certainly neater. Furthermore, it is not essential that mechanical precision enters into the work. But if we did take a notion to shifting mountains, we certainly have larger ones and more of them."

Asbal was momentarily nettled by this chamber of commerce approach.

"In proportion to the rest of the mass, yours don't amount to much."

Corbin stepped to a window. "The horizon is as far off here, as it is where I come from," he declared, with feigned stupidity.

Asbal snorted derisively. "With all your dabblings in mathematics, you are still bound by hallucinations and illusions. You keep your brains shackled by your senses. Now, our space is infinite in extent, but finite in volume."

"What's that? Infinite in extent, but finite in volume?"

"Don't believe it, eh?"

"Pure nonsense," Corbin declared.

Asbal took a crayon and stepped to a blackboard with cross-ruled lines. He drew a vertical and a horizontal axis. "Just to keep this simple for you," he announced, "I won't use the tri-dimensional graphic method." Two spaces to the right of the vertical axis he drew another line, parallel to it. Between this and the axis he traced a curve.

"The curve extends to infinity. Its equation is Y squared equals X cubed, divided by 2a minus X," Asbal recited. "When X equals 2a, the curve has reached infinity, where it is tangent to the asymptote." His irony was not heavy enough to make him tell Corbin that the vertical line to the right of the axis was an asymptote. "Very well, rotate the curve about its asymptote!"

This was easy to visualize. Just as rotating a circle would describe a sphere in space, so would rotation of Asbal's curve shape a figure somewhat like a turnip, except that instead of being rounded at the leaf-end, it would be shaped as if a second root end were growing out of it, and tapering indefinitely in the opposite direction.

"The volume of that solid, in case you still don't recognize it," Asbal reminded him, now with good-humored malice, "is two *pi*-squared times *a*-cubed. As long as *a* is finite, the volume of the solid is finite. Even though its ends extend to infinity."

This was the Cissoid of Diocles, known to terrestrial mathematicians for more than two thousand years. But in snapping at the bait, Corbin had won an advantage.

"I still think I could figure a better way of keeping your space curvature balanced."

Asbal wagged his head. "I'd find it entertaining to have you try. And in case you don't make good progress, I'll have you demoted to tending the thermo-couples at the volcanos. Report for duty in the morning."

CORBIN told himself as he went to meet Lani that this was a quiet start. Once he had access to the equations of the space-time continuum of quantum land, he could determine the surface which joined it with the world he had left.

When a plane cut a four-dimensional solid, the intersection is a tri-dimension-

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al solid. Quantum land and the other, the main universe, must have a plane in common, a veil of illusion, which a man could penetrate, if only he knew precisely where the barrier was. While he could not by any of his senses detect it directly, he could, by determining its position in terms of the dimensions he could perceive, guide himself toward it.

Psychic phenomena, so-called, were merely the doings of entities which, in addition to being of extremely tenuous matter, were able to function in the fourth dimension. Such a creature could, for instance, pass from the inside of a solid sphere to the outside, without piercing the shell. Omelettes could be made without breaking eggs. These barriers were effective only with respect to three dimensions. The fourth was clear and unobstructed.

His old-time practice of attempting to visualize a tesseract would now stand him in good stead. Once he had the proper equation, and the proper landmarks, he would follow the fourth axis. He would then corner Gale, slug him until he did not know his right name, and then resign before Gale regained sufficient wit to fire him.

He was as good as certain that Gale had previously stepped up the power sufficiently to have gained a comprehensive view of hyper-space. Once aware of the possibilities, he had then baited Corbin to the focal point of the poles, to dispose of him in a clean and foolproof way.

Corbin readily accounted for Marcia's presence. Gale had invited her as a witness, so that whatever she might later say about the quarrel, she would also be compelled to state that Corbin had vanished before her eyes. There would be no network of circumstantial evidence to trap Gale, as well could have been the case had only Gale and Corbin been there at the time.

After supper, Lani hustled Corbin into a round of the shopping district to build up a wardrobe. Haberdashery covered a range of fancy he had never suspected. "Better fix me up with something like Asbal wears," he quickly decided. "I'll get along better, that way."

Once he had the stuff stowed in his rooms in government quarters, Lani suggested a moonlight stroll among the private residences outside the city walls. Individualism was as conspicuous in architectural fancy as it was in clothing. What caught her fancy was a tile roofed place which reminded him somewhat of a Mediterranean villa, though on a small scale.

"This one's darling, don't you think?"

It certainly was, but Lani's voice had alarming implications. Her cozy tone was seconded by a saucer-eyed expression and a possessive touch. They were no more than comfortably seated under a tree from whose transparent shadows they had a view of the vest-pocket villa when Lani continued, "For the time, we can live in government quarters, but it'd be much nicer here. I know we can buy it without any trouble at all."

"I'm a bit new," Corbin evaded, gropingly, "to plunge into—ah, real estate. Wouldn't it be better to look around?"

"Oh, I've been busy looking around for some time," she assured him, brightly. "Just for myself. But with two of us, it'll be so much easier to pay for. And I don't think we ought to waste too much time."

"You aren't wasting much time, are you?"

She did not consider this as a rebuff. "Well, but of course you'd not understand! Remember how they settled that matter of larceny?"

"Do I! A regular grab-bag."

Lani picked it up from there: "Every so often, the Prime Bureaucrat marries off a batch of unattached ones, strictly on the principle of indeterminacy. Whether you draw a prize or a sentence is pretty much a matter of chance."

"When's the next raffle?" he demanded, apprehensively.

"There's not too much time to waste, Bill. You and I have had a lot in com-

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mon, right from the start. You could do a great deal worse, and you are very likely to."

"That leopard was moving pretty rapidly," he admitted, reminiscently. "And so were you. But there's a lot in what you say. I could do much worse. And you have a lovely—ah, disposition, too."

WHILE somewhat short of an ardently romantic declaration, Corbin's words brought a happy light to Lani's face. She snuggled up, and kissed him very successfully on the very first attempt. "Bill," she went on, breathlessly, "I know why you're squeamish about the idea. You're planning escape back to your own world. Otherwise you wouldn't for an instant have thought of running the chance of having some unattached hag dumped on you. Would you?"

"Truth of it is, darling, from the minute I arrived here, you've been the only woman I've noticed."

"That is a sweet thing to say, Bill, even if it is not strictly true. But you are planning to leave. And you mustn't. It is dangerous. They'll catch you, and —well, I told you, didn't I?"

Corbin sighed. "Even if I weren't, you'd stick to your notion and act as though I were."

To Lani, all this was as good as an admission. "I could help you escape, you know."

"Because of your job in the political bureau?"

She nodded. "By misplacing papers that would handicap you, and showing you those that would help. And I will help, if you promise to take me with you. And another thing, if we get this lovely little villa, Asbal will be convinced you appreciate your opportunities here. He'll be thrown off guard."

Lani had a peculiar flavor of charm that could not be spoiled by pointed realism. It should have jarred, but it did not.

"Suppose," he proposed, "that we take time to know each other a little better?"

"You've got an earth woman on the brain. Don't tell me you haven't! Oh, all right. Most immigrants do have. It does take them time to get adjusted. You're so right, darling. It would be better if we waited for a while. But we can buy the villa, can't we? Just in case my helping doesn't do any good?"

"You'd really like to leave here with me?"

"It'd be thrilling. I'd love a world where there isn't so much change all the time."

And, remembering how Marcia had been quite engrossed in swapping kisses with Gale, he began to see a very good reason for taking Lani with him when he followed the fourth axis. While he was by no means so narrow-minded as to condemn human impulse, the fact remained that Marcia must have been attracted by Gale; and her taste was revolting. So he got a comfortable armful of Lani, and listened to her blend of plans for housekeeping, and for travel.

V

FROM A slow-moving disc, Corbin charted the area in which he had entered hyper-space. Not far from there was the spot where the car had materialized. This he plotted on the sheet. Later, back at the science building, he examined the vehicle which Asbal had put into the museum. It was a late model Ford convertible, registered in the name of Henry Briggs, of Wittenburg. Judging from the book of field notes, the vehicle had been used by one of the surveying crew in the primary network, only a few miles from the installation.

From these data, Corbin had to solve his problem. His work was analogous to navigation. While Panama and Ceylon, for instance, were both on the ninth parallel of latitude, the shortest distance between those points was not that parallel, but a line which went as far north as the twenty-second parallel before bending southward again to touch Ceylon.

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Tracing this course on a flat surface would give a curve but on the spherical surface of the earth, the course was straight. That is, by following a geodesic, and so apparently going out of his way, the navigator in fact bore directly toward his destination.

This was the principle which Corbin intended to apply to the fourth-dimensional continuum. He would plot a geodesic which, seemingly wide of the mark in terms of perceptible space, would take him the way he should go.

Lani did prove helpful in looting the files of other departments. This surreptitious information gave him data on previous translations into hyper-space. Asbal never looked beyond the surface of Corbin's daily routine. And, to keep Lani in good humor, he devoted evenings to selecting furnishings for the villa.

Meanwhile, Corbin was not distinguishing himself in his pretense of attempting to improve the method of offsetting space shifts caused by Gale's installation.

Asbal said, "I hear you're buying a house. Well, you can commute to the volcanoes. And if you can devise a precision-built gas mask, you'll enjoy your work a great deal more."

Corbin's computing room window looked out over the city. He could see the tiled roof of the villa, and the entrance used by those coming to town from the countryside in which he had made his first appearance. Sometimes, the red tiles, twinkling against a background of foliage, tempted him. His glance strayed often. He was wondering whether Lani really wanted to go with him, or whether she intended to upset his plans in such a way that he could not leave, and yet would evade destructive penalties. Uncertainty warped his calculations.

So, it was anything but coincidental that, happening to look out, he saw two farmers escorting a red-haired woman who wore slacks and a jacket. The woman was Marcia, newly translated into hyper-space!

How, and why she had crossed the border had to be answered at once. The replies she made to the bureaucrats before whom she would be taken for a quizzing would upset all his plans. Whatever he did, he had to do in a hurry.

She would undoubtedly speak of the installation, just as he himself had. This would make Imbro suspect that there was a plan to invade hyper-space. And that would doom Corbin to the volcanos, with Asbal redoubling his efforts to strengthen the spatial barrier.

Corbin sent a clerk to take a message to Lani: "Tell her I'm working on calculations that have to be finished tonight. I'll be working late."

ANXIOUSLY, he looked out at the flight port. Imbro's disc was no longer there. None of the personal discs still parked had the insignium of a vice-bureaucrat. That gave him his chance. He left his desk and made for the ground-floor laboratories, and thence to the museum. He paused for another look at the Ford convertible.

"Came in on a geodesic. Ought to go out on one," he thought.

Leaving the museum, he presently came to a side entrance of the administration building. There, in an anteroom, he sat down to gossip with messengers. They questioned him pointedly about earth women and their ways. It was pretty much the sort of quizzing encountered by a soldier or sailor returning from duty in the Far East. With a chuckle, Corbin assured them that a woman was pretty much a woman, regardless of what part of space she hailed from. Even in such trivia as complexion, there wasn't enough difference to count.

"Well, take it or leave it," he concluded, and got up. "If you don't believe me, try asking her. I've got to see a man about a volcano."

"You try asking her," his audience challenged. "She can't talk."

"Then she's not an earth-woman. Probably a robot."

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THAT Marcia would not talk encouraged him enormously. Her very arrival had erased red-roofed villas from his mind.

Once he learned that Marcia was in government quarters, he restrained his impatience, and waited until the curious visitors had convinced themselves that the redheaded foreigner actually would not or could not talk. She was not under guard. After all, there was no place for her to go.

He spent his time keeping out of sight, except for a few minutes of shopping. He bought a tunic, and a headgear somewhat like a turban. Since veils were not unknown, he got one. Once he had the bundle wrapped up in a long cape he waited until it was late enough for there to be little chance of encounters with fellow employees.

At last he stalked down the dimly lighted hall and tapped at Marcia's door. She did not answer. He stepped in. Beckoning for silence, he caught her in his arms and whispered, "Someone may be listening. Put these things on. I'll be asking you questions. Do not say anything."

She lost little time getting shed of her slacks and replacing them with a tunic. Corbin kept the few moments animated by a volley of questions of the sort he had heard his predecessors ask.

Once she was dressed, he whispered, "Meet me at the foot of the stairs." And then, with a final futile question, he exclaimed as in disgust at a creature who could not understand a single one of three of four languages. He stamped out into the hall.

He doubted that any listeners had been posted. Any such precision of procedure would have been unnatural.

After endlessly dragging minutes, Marcia was at his side. Avoiding the main entrance, they stepped to a dark alley which skirted the commissary. Emerging from its gloom, they made a circuit which brought them finally into the dim glow of vapor bulbs. The few pedestrians abroad paid them no heed. Presently they were in the central park of the city. It had all the shadows which could be desired. Corbin picked the deepest of these, and drew Marcia well out of sight.

"I saw you," he began, "as you came in."

"I couldn't count on anything that lucky," she answered. "I couldn't count on anything at all. That's why I wouldn't talk. So they'd send for you, if you were here. Because you knew the latest earth customs and speech. What I mean is, I didn't want them to think I'd come to find you, even if I'd been sure they'd 've been obliging enough to try."

"You came to find me? How'd you manage?"

Breathlessly, eagerly, incoherently, each crowded into the other's speech, now that the impact of the encounter had worn off. "I suspected Les of having played some sort of trick. I accused him."

"Bluffed him?"

"Bluffed. Oh, desperately. He got frightened. So I made him break the barrier. To let me across."

"Oh, good Lord!" Corbin exclaimed in dismay. "Now he'll make sure of himself by seeing that neither of us will ever get back."

"No, he won't! I took care of that. The old, old trick. Writings that will accuse him if I don't come back. If ever a man was in a jitter, it was Lester Gale."

"Sweet, whatever possessed you to risk it?"

"From what we saw, that night, for a split second," she answered, "we both knew you had been translated. That you'd not been ionized or annihilated. It was all my fault, so I had to risk coming to help you."

"Your fault?"

"Of course it was. I'd played up to Les, simply to prod you away from your security-worship. I didn't realize he took it so seriously that he'd dispose of you. Les will be keeping the power on, not

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at peak, but nearly so. Enough for us to pick the spot where the barrier can be crossed. Enough for him to see us, so he can turn on full power, the top load, the peak that the installation couldn't stand for more than a few seconds. And so we'll go back."

He told her of the geodesics he had been calculating.

"But now you don't need anything of the sort," she countered. "Let's start, right away. Can you fly a disc?"

"The noise of take-off would be a dead giveaway at night. We'd have a patrol after us. They're against the return of anyone. You were smarter than you realized. If you'd talked, we'd be in a nasty fix. Know the way to where you broke through?"

She described the area, the black cliff, and the earth cracks.

"Right where I crossed."

"It's a long walk."

"There's a Ford in the museum. If the patrols were alerted, it would be hard for them to follow it at night. They don't have radar."

BY SUCH light as a crescent moon offered, Corbin and Marcia pushed the convertible from the museum's ground floor, and into the shadows of the street. "Wait in that corner," he said, "while I go to my plotting room to get charts and the gear I fixed for escape."

"You won't need them," she protested. "Les—"

"I'm taking no chances. You've got only a slim hold on him."

"Then I'm coming with you."

They followed darkened corridors and stairways. Minutes later, they returned. With Marcia steering, Corbin shoved the car for nearly a block, and into the sled-yard of a produce warehouse. The yard was near the city gateway. Its high walls would muffle sound. He primed the carburetor. He jacked up the rear end. With the gears meshed, he gave the wheel a few turns before Marcia twisted the ignition key.

There would be no grinding of the starter to put anyone on the alert. The next twist of the wheel made the engine fire. Marcia throttled down after the first brief moment of muffler rumble. Corbin set the jack on the floorboards, keeping the handle on the seat. He had a pair of tire irons within reach, just in case he had to take care of a city watchman.

Taking the wheel, Corbin nosed into the street. Near the city exit, he got out for a look. All was clear; but he was sweat-drenched and trembling, before he put the walls behind them. Without headlights, he advanced at a crawl, picking his way along the rutted road.

"Suppose we don't make it?" Marcia whispered, tensely.

"Ease up, honey. Nobody heard us take off."

"But something might slip."

"Join the outlaw packs, then. Or try to. That's why I brought the equations and the chart board."

After moments of silence, she said, "The road seems to be weaving."

"That's from the power we're applying. Quantum phenomenon. Lord, Lord, will I be glad to be back where h is a reasonable fraction!"

"If I weren't so ready to crawl out of my skin, I'd scream with glee, darling."

He told her of his bout with the leopard, and his experience with the power projector guns and the whipping post. He added to these first observations all the things he had subsequently noted; and he concluded, "The smart ones, the scientists, run things. The dumb ones do the work. Those too dumb or too crooked to work, they become bureaucrats. Would you believe it, they don't use carbon paper in their offices, and when I explained how simple it is to make the stuff, I was nearly lynched."

"But why?"

"Because they make about forty copies of every paper, and think of how many clerks would be put out of work by such a gimmick! And the more employees a bureaucrat has working for him, the

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more prestige he has. Maybe I've had a glimpse of the future we're facing, in our own space-time, but cockeyed as things are there, it's still a lot better than that madhouse I fell into!

"So help me, the minute we cross the barrier, I'm telling Gale where he can shove that job. You and I are starting out, and to hell with security. There isn't any such thing, and I was a chump for wishing there were. Hyper-space cured me!"

"We'll have fun now, Bill. And it won't be you that'll be paid off. It'll be Les, and I can hardly wait."

And then he heard it—the far-off roar and hiss of cruising discs. The light of their jets soon became bright enough to reflect from the windshield. Corbin pulled to a halt under a tree. "Half a dozen of them," he muttered. "Fanning out. What the devil set them on the prowl?"

Though he did not expect an answer to that question, particularly since he was convinced that Lani's suspicions had been aroused, Marcia did have a thought: "Maybe they missed me, and began looking for you."

VI

ALL THE discs passed on. "Too high for observation, and not using searchlights," Corbin remarked, as he nosed out from cover.

There were blasts and downward reaching spurts of flame. From the ground came eruptions of blue-white sparks. By the intermittent flicker, Corbin could distinguish the outline of a familiar ridge, low and dark. Marcia exclaimed, "That's it, right ahead. I didn't black out, the way you did."

"They're hovering over it now. Blasting it with energy slugs."

"More coming up behind us."

Corbin cursed bitterly. "And flying lower."

"They'll spot us sure, here in the open. Bill, where'll we go?"

For answer, Corbin stepped on the gas. The discs roared over, blasting the road and the brush on either side. The gunners were apparently not trying to pick a target. They were firing at random, as the city police had. Corbin snapped on the headlights. When Marcia protested, he said, "They're peppering the whole landscape, till they've poured out enough energy to nail us by chance. We've got to risk lights and move as fast as we can."

The road was now weaving and twisting. Outlines of trees and rocks became hazy. Objects seemed to blend into each other, then separate, only to merge with others. The dark ridge, now highlighted by the incessant discharge of power tubes, seemed to waver, though the vehicle was jouncing and sliding, skidding and yawning in a way to make observation almost impossible. Corbin raised the map board he had clipped to the steering column. On it was the geodesic he had to follow.

"Can you see if Gale's got the power on?" he demanded. "How far can you see through?"

"There's so much glare—"

The car went into a spin as though on ice. It came up broadside against a tree, and with the rear axle housing snagged on an outcropping rock. Marcia was pitched out into the weeds. Two women bounced up into sight. For a moment, Corbin wondered whether he had encountered a new quantum phenomenon.

Then he saw that Marcia had neither been duplicated, nor halved. The extra woman was Lani. "You said you'd take me with you," she told him, "and I'm going."

Marcia blinked and swallowed. "You couldn't've had much time for geodesics! I might've known you'd do all right for yourself!"

"Quit griping and take the wheel. I'm jacking up the hind end. You—" He caught Lani by the arm. "Grab some rocks and brush."

Busy moments followed, but Lani found time to say, in gasps, "When she wouldn't talk, they looked for you, then

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looked for me. So I knew wherever you were—what you worked with—it wasn't —"

"Give 'er the gun!" Corbin yelled, and to Lani, "Shove, and save your breath."

"Don't blame me. I didn't tell anyone."

The rumble of the engine cut off his retort. The car lurched out of the ditch. When Corbin resumed the wheel, Marcia cried, "Get back on the road. It leads —"

"Nothing leads anywhere," he broke in, and barged across country, in second, weaving in and out among boulders, and dodging clumps of brush too thick to be ridden down.

The discs were settling slowly as they always did when about to land. They were in crescent formation. The wings of the arc were closing, as if to complete an encirclement when they grounded. The dark ridge loomed up. It cut off the glow of the discs that were just ahead. They had sunk beneath its rim. The distant volcano flared up with a red so deep that it was distinguishable only when mirrored from the ridge.

"We can't get away, not even afoot," Marcia said, despairingly. "Not now. They're getting out. We can't join the outlaw packs."

CREWMEN were silhouetted against the metallic gray of grounded discs. The glare of skycraft almost at landing level picked out others. Some had projectors to scatter power charges. Remembering the blast that had been sprayed at a whole crowd, to pick only him and lay him out, Corbin resolved not to halt. There were flashes, but no sensation.

The firing stopped. Those closing in on both sides were now in danger of blasting each other if they shot at their target. They had their lurching, lumbering quarry pocketed.

Corbin booted the throttle. The black ridge loomed up. Marcia screamed and made a dive for the cowling. Lani caught him by the shoulders and cried, "Stop, you'll kill us! Give up, we'll have a chance. Stop—"

Her frantic grip and her weight made him swerve. There was a grinding skid. A tire let go. Corbin tramped the pedal to the floorboard. He was back on his mark. The headlights picked it out. Ridge or no ridge, he was staying on his geodesic.

The patrol, having taken their quarry for granted, suddenly broke into a run. They fired as they ran, for now they could level off at the car without peppering each other. Twinkling eruptions flickered from the cliff. It, as well as the vehicle, was their target. And then so many things happened simultaneously that Corbin could no longer keep his perceptions separated. They blended into confusion.

There was a wild scream from the back seat, a split second before the expected headlong impact. The vehicle slewed like a racer broadsiding into a curve. It dumped Corbin, though without pinning him down. For an instant, he was tangled up with Marcia, a jack handle, a tire iron, and a chart board.

There was no crumpling of fenders as the car rolled over. It merged with the seemingly solid face of the cliff. Corbin felt as though he had plunged into a porous jelly. He could not tell whether he was penetrating the rock, or whether it was infiltrating into his substance. Crewmen crowded into the same space. They seemed to be coming at him head on, from beneath, and from above. There was neither up, nor down, nor sidewise.

Corbin plied the jack handle till something twisted it from his grip. He snatched a power gun. Time was as warped as dimension. Bluish light permeated the substance of the cliff. Gale was there. The bulk of the resonator loomed up. Its poles gleamed. Copper bus bars made ruddy splashes. The rest of the resonator room was visible, but with a distorted perspective, as though it reached into infinity.

Crewmen seized a redheaded girl. She seemed duplicated and reduplicated time

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on end, as though she had become an animation of a strobolight photo of a rapidly moving object.

Gale shouted, and charged into the multiplication of figures. Another redhead popped up ahead of Corbin. She had a tire iron with which she slashed crazily, blindly. Corbin fired the projector again. That emptied it. He hurled it, and flung himself against Marcia.

They lurched, rolled. He tore the tire iron from her hand, and heaved it at the bus bars.

There was a blinding flash, a high tension arc, all green, a fierce and deadly green as the metal evaporated. Pellets of molten copper burned through his clothes and bit into his back. Circuit breakers pounded and thumped, but too late. From the computing room came the yells and footfalls of the statisticians.

"Fire!"

INSULATION was burning. Transformer oil flared up and boiled over. The terrific backlash of inductance had not only broken down the insulation, but had started arcs which the oil could not quench.

Blinded, and seeing only green and red and black spots which existed only in his tortured optic nerves, Corbin caught Marcia and got her to her feet. He knew his way without sight. "No fire this way," he cried, and hustled her along. He kept moving until they stumbled into the chilly night air. Stampeding people ran into them, bowled them over, and raced on. Finally Corbin and Marcia stopped in the shelter of a boulder.

"I can barely see," he gasped. "Tell me."

"The whole building's ablaze. I was facing the other way, so I wasn't blinded. What happened?"

Corbin had a good idea. It was so good that he kept it to himself, and answered, "There was a blank. I remember knocking you across the neutral space. That's all I can call it. Neutral ground. Critical plane. Maybe it hadn't any dimensions, but it seemed to have. It seemed to be the intersection of hyper-space and our space. Four-dimensional space cut by—I don't know, maybe by a plane, maybe by a solid. They were about to grab you. You were going wild, doing a Chinese sword dance with a tire iron."

"I remembered to keep striking. The way you did with the leopard. I wonder where Les is? What happened to him? I saw him."

"Les?"

"I saw him, for a glimpse. It was weird. Him, the resonator, the crewmen, the car, everything blending together. That girl friend of yours—"

"She jumped. Wonder you didn't."

"I was too scared."

The fire equipment had not a chance. The main building was gutted. Corbin said, "I am in a tough spot now. How'll I explain where I've been all this time? No matter what kind of yarn I dish out, it'll land me in the booby hatch."

"Nobody's had time to miss you, darling. You're still off shift, you won't be supposed to go on till—"

"What's that?"

She made it clear to him that the thinning gloom, against which sahuaros were beginning to make black figures, was the first dawn to follow the midnight clash with Gale. Corbin nodded, and said, "I might have known that time was as badly scrambled as everything else, and that the days in hyper-space would not jibe with the days on this side. Let's get rid of these masquerade clothes. I'll see you then. And hurry, before it's light enough for anyone to see how we're rigged out."

THE FIRST red flush was streaking the desert when he knocked at Marcia's door. "I got home just in time to catch a phone call. Sally Blaine, one of the statisticians, told me all about it," she said. "Guess how they're explaining the destruction."

"I'll need a handy story. The wilder

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theirs are, the easier it'll be for me, just in case I do get on the carpet."

"A stolen Ford convertible is supposed to have crashed through the wall and made a short circuit."

"If it belongs to Henry Briggs, I know how it got there, but I'd as soon not discuss the matter."

"And they found the charred remains of a man," Marcia continued.

Corbin grimaced. "That's more than I ever wished Gale, even during the worst of it. But how the devil could it have happened to him?"

That evening, it was clearly established, by the lack of dental work, that the dead man could not be Lester Gale. And every other member of the staff had been accounted for except Gale.

Destruction had finished the project. It appeared unlikely that there would be sufficient millions available to replace it. Taking Marcia and his severance pay, Corbin, with a fine new disregard for security, proposed that honeymooning get top priority, with job hunting deferred until they both really needed a change of pace.

And it was not until a long time thereafter that Corbin explained, "I was too rattled to tell you, then and there, that that unknown man could not have been Lester Gale. Les was making a dive for the crewmen who had grabbed my red-headed girl friend from hyper-space. Lani was about your build and color. He made the same mistake they did, I guess. That's what saved you and me. They all closed in on him and her, thinking they had us."

He never did tell Marcia that he had deliberately flung the tire iron to short out the bus bars, and so close the gap, before the crewmen could realize their mistake and come back to correct it. Marcia would have insisted that he had made the most of his chance to give Gale a career in hyper-space; and that he could as handily have cut the power by reaching for the switch.

And Marcia would have been right. The one thing he had not counted on was the fire. Someone had chiseled on insulation.

Posted on every life-bearing planet, these selfless guardians strike down any who threaten man's long agonizing climb to the stars in—

THE STAR WATCHERS

A Brilliant Novel

By ERIC FRANK RUSSELL

Featured in the November Issue of Our Companion Magazine

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"When it all began to happen I thought I'd have to play second fiddle—to Space itself!"

STAR BRIDE

I ALWAYS knew, ever since we were in school together, that he'd love me some day; and I knew somehow too that I'd always be in second place. I didn't really care either, but I never guessed then what I'd come second to: a native girl from a conquered planet.

I couldn't guess because those school days were before the Conquest and the Empire, back in the days when we used to talk about a rocket to a moon and never dreamed how fast it would all happen after that rocket.

When it did all begin to happen I thought at first what I was going to come second to was Space itself. But that wasn't for long and now Space can never take him away from me and neither can she, not really, because she's dead.

But he sits there by the waters and talks and I can't even hate her, because she was a woman too, and she loved him too, and those were what she died of.

He doesn't talk about it as often as he used to, and I suppose that's something. It's only when the fever's bad, or he's tried to talk to the Federal Council again about a humane colonial policy. That's worse than the fever.

He sits there and he looks up at her star and he says, "But damn it, they're *people*. Oh, I was like all the rest at first; I was expecting some kind of monster even after the reports from the Conquest troops. And when I saw that they looked almost like us, and after all those months in the space ship, with the old regulation against mixed crews. . . .

He has to tell it. The psychiatrist explained that to me very carefully. I'm only glad it doesn't come so often now.

"Everybody in Colonial Administration was doing it," he says. "They'd pick the girl that came the closest to somebody back home and they'd go through the Vinian marriage rite—which of course isn't recognized legally under the C. A., at least not where we're concerned."

By ANTHONY BOUCHER

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I've never asked him whether she came close to me.

"It's a beautiful rite, though," he says. "That's what I keep telling the Council: Vln had a much higher level of pre-Conquest civilization than we'll admit. She taught me poetry and music that. . . ."

I know it all by heart now. All the poetry and all the music. It's strange and sad and like nothing you ever dreamed of . . . and like everything you ever dreamed.

"It was living with her that made me know," he says. "Being with her, part of her, knowing that there was nothing grotesque, nothing monstrous about green and white flesh in the same bed."

No, that's what he used to say. He doesn't say that part any more. He does love me. "They've got to understand!" he says, looking at her star.

The psychiatrist explained how he's transfering his guilt to the Council and the Colonial policy; but I still don't see why he has to have guilt. He couldn't help it. He wanted to come back. He meant to come back. Only that was the trip he got space fever, and of course after that he was planet-bound for life.

"She had a funny name," he says. "I never could pronounce it right—all vowels. So I called her Star-bride, even though she said that was foolish—we both belonged to the same star, the sun, even if we were of different planets. Now is that a primitive reaction? I tell you the average level of Vlnian scientific culture. . . ."

And I still think of it as her star when he sits there and looks at it. I can't keep things like that straight, and he does call her Star-bride.

"I swore to come back before the child was born," he said. "I swore by her God and by mine and He heard me under both names. And she said very simply, 'If you don't, I'll die.' That's all, just 'I'll die.' And then we drank native wine and sang folksongs all night and went to bed in the dawn."

And he doesn't need to tell me about his letter to her, but he does. He doesn't need to because I sent it myself. It was the first thing he thought of when he came out of the fever and saw the calendar and I wrote it down for him and sent it. And it came back with the C. A. stamp: *Deceased* and that was all.

"And I don't know how she died," he says, "or even whether the child was born. Try to find out anything about a native from a Colonial Administrator! They've got to be made to realize. . . ."

Then he usually doesn't talk for a while. He just sits there by the waters and looks up at the blue star and sings their sad folksongs with the funny names: *Saint Louis Blues* and *Barbara Allen* and *Lover, Come Back To Me.*

And after a while I say, "I'm not planet-bound. Some day when you're well enough for me to leave you I'll go to Vln—"

" *'Earth,'* " he says, almost as though it was a love-word and not just a funny noise. "That's their name for Vln. She called herself an earth woman, and she called me her martian."

"I'll go to Earth," I say, only I never can pronounce it quite right and he always laughs a little, "and I'll find your child and I'll bring it back to you."

Then he turns and smiles at me and after a while we leave the waters of the canal and go inside again away from her blue star and I can stand coming second even to a dead native white Star-bride from the planet Earth.

Roman Assembly Line

THERE is evidence that the assembly line technique dates back to the third century B. C. The Romans won the first Punic War because their ship-building program was successful. Taking as their model an undefeatable Carthaginean vessel wrecked on their coast, in two months time they built 100 similar craft by giving crews a definite small job to do over and over again. By the usual methods it would have taken the Romans, using a similar number of people, nearer two years to build one hundred such ships.

—*Mark Knight*

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Miss Digby became the belle of the ball

The Way of the Moth

By STANTON A. COBLENTZ

Plump, dull and homely, Miss Digby seemed the perfect subject for Dr. Ambrose's experiment—but he didn't know he'd be her victim!

ALWAYS one scene came back to haunt Ambrose.

In the midst of it all he saw two eyes—intense steel-blue eyes that widened and brightened in an unspoken appeal. Above the eyes and around them was a puffy middle-aged face—bobbed copper-red hair with the gray just showing where the dye had not taken about the roots—a faintly wrinkled skin of a milky hothouse complexion—a big crimson-daubed mouth that opened to reveal yellowish over-sized teeth.

Yet a powerful attraction drew Ambrose toward that face. He could shut his eyes and imagine a dimpled Venus

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—and when he shut his eyes he wanted to enclose the charmer in a never-ending embrace.

Even when his eyes were open a sorcery surrounded her. He thought he knew how Ulysses felt when he heard the Siren singers. All wonder, all magic, all loveliness, all love shone in that commonplace face with the fat and the wrinkles and the too-large mouth and teeth.

Ambrose felt his arms reaching about the woman—when all at once a counter-feeling, a revulsion, a disgust swept over him for the fraction of a second and made him recoil—before the charm once more gripped him with its drugging seductiveness.

This was the scene that returned and would give Ambrose no peace. In a rueful manner, like a prisoner who retraces his criminal record, he would mentally review the events that had led to that astonishing episode with Rowena and the hardly less astonishing sequel.

HE himself was to blame—that he would never deny. Yet he had begun in a spirit of sober scientific experimentation and had not foreseen how he and other men would be caught in the toils. It had all started three years ago when he was thirty-two—rather young to become Assistant Director of the great Cokesbury-Ardmore Experimental Laboratories.

The appointment, he realized, had been due to several strokes of luck he had had in biological research, particularly to his paper on *Mating Habits of the Lepidoptera*, which had attracted wide attention upon its appearance in *The American Entomologist*. It was that unfortunate article and the preceding years of research on moths and butterflies which had paved the path to his dire predicament.

He sometimes wondered what ironic fate had given him Rowena Digby as a secretary. "A fine woman, most efficient and capable." Thus old Dr. Grant had recommended her upon resigning her along with his post to his young colleague. "But I tell you, Frank, she's being wasted here in an office—could have made some man mighty happy."

Maybe twenty years ago, thought Ambrose, knowing that she was on the dimmer side of forty. However, what he wanted was an office helper, not a wife. He was already engaged to sprightly Carlotta Wray, though they would not be married until she had recovered from the effects of a recent grave illness. Meanwhile Miss Digby was, as her former chief said, efficient and capable.

Yet Ambrose did take an interest in her though merely in an impersonal, almost clinical way. While he would as soon have thought of falling in love with anyone's grandmother he found her intriguing after the fashion of one of his laboratory specimens.

He noted her thwarted, lonely life—heard her say how she returned each day to an empty room from which there was little relief except in the monotony of her work. He realized how she longed for companionship and affection and observed how men, though they tipped their hats to her politely, would no more have asked her out for an evening than they would have sought a date with Nefertiti's dusty bones.

"Too bad," he thought, "that we can't find some way of making her more attractive—some essence, some elixir that would remake her, so that men would take to her like small boys to a neighbor's apple tree. Yes, not only her but thousands like her, who lead a blighted, frustrated life. It would be doing a great social service."

At first the idea came to him only casually. He toyed with it rather than considered it seriously. But in time the thought began to take root. Could not biology come to the aid? Could not it supply some element that would affect the glands and functions of the human body, so that an unattractive female would suddenly become appealing?

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No, not merely by way of rejuvenation—that had been tried and the results were dubious—but by something more subtle that would illuminate a personality with some indefinable irresistible allurement.

And then Ambrose remembered—it was inevitable that he should remember—his experiments with moths. He recalled how the males of some species will find the females across miles of space, with no known guide except some vague exhalation or scent—how in fact, in the case of some moths such as the Lasiocampidae, the males will assemble in large numbers at the subtle far-off attraction of the female.

The general view of biologists was that the males were drawn by the sense of smell. But this explanation had never quite satisfied Ambrose in view of the wide distances traversed. In his article in the *Entomologist* he had put forth the theory (bolstered by much evidence) that weak electrical impulses issue from the female moths—that they give out faint vibrations a little like radio waves, which tingle the nerves of the males and make them respond automatically.

Now suddenly a new thought came to Ambrose—what was possible among moths might be possible also among humans! The essence that produced the wave-vibrations might, if transferred to the human body, likewise produce wave-vibrations and these might work upon a man's nerves so that he would be drawn to a woman without suspecting why.

There was no certainty, of course, but knowing that the similarities between all living things are deeper than most of us suppose, that all are more or less affected by the same type if not always the same range of impulses, Ambrose felt that he had a good working basis.

A year passed, however, before he could put his theories to the test. Meanwhile he had carefully extracted and preserved the secretions of the glands of thousands of female moths—waiting until he had enough for several injections on human beings.

Then one day he summoned his secretary. "Miss Digby," he began, adjusting his spectacles a little nervously, as he peered out at her across a litter of books, microscopic slides and scientific journals, "you can help, if you wish, in a great experiment for the sake of science.

"It is—well, I can't go into details, but if it succeeds it will make you feel years younger. It's in the nature of an injection, which at worst won't cause you any more than a trifling inconvenience. But if it succeeds—"

Miss Digby, who was looking particularly worn and haggard that day, stared at her superior with confidence, with admiration in her tired steel-blue eyes—yes, with something a little beyond admiration, Ambrose felt in a flash, though he brushed the suspicion from him as a foolish imagining.

"Well, if it's for the sake of science, Dr. Ambrose, of course I'm glad to help out," she beamed upon him as she bared her arm.

IT was after the second injection that Ambrose detected the change.

There was something subtle about it at first—nothing that you could exactly put a finger on. But men had begun to notice Miss Digby's existence. Mr. Bixler, the laboratory assistant, had unconsciously fallen out of his old formal automatic way of addressing her.

Ambrose observed the human smile on his lips, the human way in which he hung about, awaiting her response. It was the same with young Paul Daniels, the accountant—and even with sixty-year-old Dwiggins, the janitor.

But this was only the beginning. For the first time in his remembrance Ambrose began to hear masculine voices over the telephone, inquiring for Miss Digby, or (a little later), for Rowena. Then one afternoon, when his secretary was all trimmed, coiffured and mani-

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cured, her face rouged and powdered as never before during their acquaintance, Ambrose was surprised to hear her request to be let off early.

"I—I have an appointment," she explained, coyly.

A week later Ambrose was sure he saw her at the theatre, side by side with Mr. Bixler, with whom she was conversing effusively. The following evening, she passed him in an automobile on Sloane Boulevard—and Ambrose was certain he recognized Daniels' sleek new gray sedan.

From that time forth, she appeared to pay less attention to business and he ceased to have reason to commend her efficiency and capability. Several times he saw men—strangers to him—waiting for her outside the office. Once he heard her at the telephone, "No, no, Charley, there's no use insisting. I simply can't. I'm dated up every evening this week."

A glow had come into her face; she carried herself with a new assurance. Of course, she was still the same puffy-cheeked creature, with dyed hair, over-large mouth and equally over-large teeth, that Ambrose could never bear. Still there was a difference which even he had to admit. Somehow, though her conversation was as flat as ever, he found it pleasant as never before to be in her company.

But the big change in Ambrose's case did not come until after the third and last injection. Previously Ambrose had flattered himself that he was immune. His nerves, apparently, had the power to resist the faint radio-like pulsations set up by the extract—this was proved by the fact that he had not been affected like Bixler and some others. But Ambrose was reckoning without the third injection.

On the morning after this application he thought he noticed an aroma like roses in the air the moment his secretary entered the office.

"Take this down, Miss Digby. . . . H'm . . . several important letters to go off," he began in his usual way. But somehow he found it hard to continue.

He could not concentrate on the letters. His gaze kept wandering to his secretary—and though he couldn't make out just what it was that held him he wanted to fling his arms about her, to fold her close. It was as if a halo enveloped her. She was the sweetest, most precious, most adorable—

But no! Was he going crazy, to let himself be caught in his own meshes? "In regard to that shipment of Hymenoptera," he heard himself dictating, "and particularly the specimens of Chalcididae and Cynipidae—" But it was no use. He could not keep his mind on the subject.

"To hell with Cynipidae!" he astonished himself by exclaiming. "You know, Miss Digby, I—I—well, I've been thinking what a wonderful day it is. You've been—h'm—you've been working too hard. What do you say to taking the day off—driving over to the beach with me and having lunch in some nice cozy spot?"

In her astonishment she let the pencil slip from her clasp. "Why, Mr. Ambrose!" was all she seemed able to answer.

"Come, what do you say, Rowena?" he pleaded, using her given name for the first time.

From the smile she radiated at him he could see that her amazement was equaled only by her joy.

NOT until they were halfway to the beach did he remember Carlotta and his duties to her—also the nasty gossip, even scandal, that might blow over him should people report that he had been gadding about with his secretary. Well, this would be the one and only time, he decided. He could not understand how he had ever let himself be so weak.

It was strange that he did not exactly enjoy her presence. He found her talk

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monotonous and boresome and was repelled as ever by her puffy face and the large yellow teeth that showed so conspicuously whenever she opened her mouth. But all the same there was a magic about her, something that made it bliss simply to be with her when he could forget—as he did for long intervals—her unattractive appearance and commonplace mind.

By the time they returned from that first jaunt, he was already "Frank" to her. And thenceforth she became increasingly inefficient as a secretary. While he in turn became less absorbed in his work.

He was furious with himself for the anger that would flame up within him whenever he heard her at the telephone —"Why, no, Arthur, I can't tonight. No, not till Friday." . . . "Oh, is that you, Chris? . . . Yes, Saturday evening, I haven't forgotten."

It was preposterous that Ambrose should take such little interchanges to heart—even more preposterous that he should be rude and abrupt with the young men who occasionally called for Rowena at the office. But the most preposterous thing of all was the plight in which he found himself when she had made her choice from among her many lovers.

He did not have to be overwise to read the signs in the air. More than once he heard her, after he had invited her out for the evening, telephone Bill or Henry or Tim or Peter to say that she was, "So sorry. After all, I can't make it."

Always he noticed how she would eye him with a beaming smile—a smile that had almost a devouring quality. Then one day, for the first time, the realization came to him that she had cared for him, had loved him all along, although in the loneliness of her repressed life she would not have dared to give any hint of her feelings.

At this knowledge his impulse was to flee. But even now the golden seductiveness of her presence—

It was that evening that the haunting scene occurred, the scene he was never to erase from memory—the scene dominated by those intense steel-blue eyes, when she had all but made open love to him and he had all but embraced her in a final passionate consummation—only to be shaken back by a feeling of disgust, of overwhelming repugnance at the sight of the puffy face and faintly wrinkled skin with its unhealthy milky complexion.

Then, as if he saw in one blinding flash how he was being trapped, he had rebelled—had rushed away after some wild gasped excuse. And though her Siren sorcery still pulled at him and almost drew him back he had driven off in his car, he hardly knew where. He only knew that it was no longer possible for him to live face to face with the deadly peril.

THE next day's papers reported the mysterious disappearance of Dr. Franklin Ambrose. Three days later it was announced that he had been discovered more than halfway across the continent in the Rocky Mountain town of Red Lode, to which he had withdrawn because of ill health. At the same time his resignation from the Cokesbury-Ardmore Experimental Laboratories was announced. And thenceforth, for half a year, he was heard of no more.

During all this time he lived a hermit's life, yet was fiendishly busy. Putting his small private capital to use he equipped a laboratory for limited chemical and entomological research.

His neighbors knew little of him except that he seemed to pass the greater part of his days catching moths in nets. Some of the townspeople believed him to be crazy—but others, noting the burning intelligence and the fierce determination in his face, suspected that he was engaged on some secret government mission.

None of them, however, realized that

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he was desperately seeking an antidote for a moth-secretion. None of them, though they saw the growing pain and the deepening furrows on his face, surmised his torments when month after month his experiments bore no fruit—when month after month he failed to find any substance which, injected into a woman's body, would counteract the maddening appeal produced by the moth-essence.

Not for half a year did he try a new plan of attack. And then one day he smiled a wan hopeful smile, closed his laboratory door and boarded an eastbound airliner.

Reaching his home town, he rushed to the telephone. He felt a fluttering of the heart, though not from love, when he heard a familiar voice ring out at the other end of the line. He noted how the answering tones wavered and shook, then rose to a pitch of almost hysterical excitement.

"*Frank!* Gracious heavens, where've you been keeping yourself? Why, they said you had a nervous breakdown—said you were out West, where you mustn't be disturbed—"

"Can I see you this evening?" he broke in unemotionally.

"This evening, Frank? I—well, really, I've got an appointment it would be hard to break. If I'd only known you were coming!"

"Tomorrow evening, then?"

"Tomorrow, I—let's see my date-book. No, I—well, yes, I've got something but I'll break it. I must see you, Frank. There's something I've got to tell you."

He found her but little changed, though she was more rouged and powdered than ever, her hair was twisted in the newest unsightly waves and a string of pearl earrings, which he believed to be new, were lodged in her fleshy ears. But what he was observing was really not so much the lady as his own reactions.

He was ready to cry out with jubilation when, after an hour, he found that his pulse had still not quickened by so much as a beat at their reunion. Not a whiff of glamour or magic exuded to him from the pale puffy features, from the homely face with the disproportionately large mouth and teeth.

He saw her for just what she was—an ordinary dull unattractive middle-aged woman.

And this realization made him as exultant as if he had won a Nobel Prize.

"Thank God! It's worked!" he congratulated himself.

Her own attitude toward him was the old beaming lovelorn one. It was evident that she forgave him for having forsaken her—not he himself but his nervous breakdown had been responsible. But there was a new constraint in her manner. From the first he knew that there was something she desperately wanted to say but could not quite bring to her lips.

"I—I hope you'll forgive me, Frank," she finally managed to announce. "I wouldn't have done this, never in the world if I'd known you were coming back. I'm engaged to be married."

From the depths of his great thankfulness he congratulated her. "Who's the—lucky man?"

"Clyde G. Fairmont."

"Clyde G. who?" he almost roared at her. Clyde G. Fairmont—sole heir of the celebrated railroad magnate Harris Fairmont—was one of the nation's wealthiest men. A thirty-eight-year-old bachelor, he had been pursued by more girls than a screen star, and was regarded as one of the best catches in the land.

"Yes, Clyde and I—we met at a party at the Van Brutzes'. We've kept it secret—we're to be married in Miami a week from Sunday."

Ambrose was so stunned that he could barely mumble a response.

IT was three weeks later that he sat with his fiancee Carlotta in the liv-

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ing-room of the Wray home. It had been hard explaining to the girl but finally he had convinced her that his desertion had not been deliberate. Finally he made her understand about the moth injection.

"But how did you ever counteract that awful drug?" she asked.

"At first I couldn't see any way. No, I couldn't see the remotest possibility of a counter-injection—that is as far as the woman was concerned. And then suddenly the idea came to me—suppose I were to inject myself?"

"But why should you inject yourself if she was the one—"

"Well, as I've told you, the reaction was set up by minute radio-like waves. Other waves of the same length would neutralize them, would form a sort of block, a blackout—a little as when a radio station is deliberately jammed."

"But how could you get other waves of the same length?"

"As a matter of fact, Carlotta, that was ridiculously simple. All I had to do was give myself three doses of that moth injection. After this I had an automatic blockade system in my own body. The impulses from Rowena simply couldn't get through."

"My word, I'll say that *was* lucky!" exclamied Carlotta as she leaned close to Ambrose. "But what about Rowena—will the drug always affect her?"

"Yes, if she lives to be ninety she'll have the men all hopping around her. They simply won't be able to help it. I'd advise Fairmont to keep a watchful eye on his bride."

And then, drawing his fiancée close, he went on in low thoughtful tones, "I've come to the conclusion, Carlotta, dear, that women are attractive enough as nature made them. One Rowena Digby is sufficient. For the sake of other men—after all, you know, I haven't any grudge against my sex—I've destroyed the secret."

Even as he spoke he envisioned a puffy white face beneath dyed copper-red hair, saw the possessor of that face arrayed in pearls and satins, observed men young and old, bowing and simpering before her, competing for her smile and basking in her favor as though a new Sheba or a new Cleopatra had come to Earth.

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She was a composite creature with a body impossibly perfect

DURING the century preceding the plague, men of Earth had been venturing into the black glare of space beyond the orbit of the moon. They skirted the fringes of Sol, and subjugated the planets beneath their feet. But they found no mother to replace the earth, nor any soil to call their own. Because of climatic, gravitic, and atmospheric differences, no man could take an axe, a rifle, and a coonskin cap, and sally forth to make a home on Mars. To colonize, he needed an earthlike planet, and Sol had but one to offer: Earth.

Beyond the orbit of Pluto, Man paused. He idled his shrieking rockets before the Great Plains of Universe, and stared across the light years of nothingness. He turned back with a shiver from the gulf of interstellum, which could be penetrated no deeper than the length of a lifetime. A cold equation said plainly that he could never

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THE SONG of VORHU

. . . for Trumpet and Kettledrum

A Novelet by WALTER M. MILLER, JR.

When space test-jockey Barry Wilkes returned to an Earth devasted by plague, he found there only one crazed woman with whom to seek a far-flung planet where civilization might bloom again!

cross it. Space-jockeys, garage mechanics, and arm chair mathematicians scrawled it on paper napkins and scratch pads, then glared at it irritably, as if sheer force of longing could change its icy symbols: $V^2 = C^2 - C^2 (E/m_oC^2 + 1)^{-2}$. But the equation had been grudgingly honored for two centuries, and despite the would-be inventors, it stated firmly that no man could ever catch a fleeting ray of light.

Only a few men looked seriously to the interstellum—the soft-eyed men, the men of pensive faces, the men of silent thoughts. At last they built a ship. But they made no promises.

But the plague struck while the ship was in space, being tested by Captain Barry Wilkes. The plague entity was an earth-adapted descendant of a Venusian micro-organism which had found a home on Earth, and which had seemed quite harmless, except to poultry, for nearly a hundred years. It sud-

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denly transferred its attentions to Man, as epidemics had sometimes done before, with startling and dismaying results.

Barry returned without testing the interstellar drive. He came back from beyond Pluto, and landed on the festered earth, on her night-side, because the plague, being a vegetable-entity, was quiescent in the darkness, or at least uncommunicable. Fires smouldered in Earth's cities, and her streets were moaning in death. Staggered and numbed by the devastation, Barry felt nothing but the cold hand of awe. Instinct moved him to search for someone untouched by the plague. He wandered until nearly dawn, protected by a germ-proof space-suit from the ship.

BEFORE he blasted off again into the red glow of morning, he had found a wretched bit of supercargo. He rocketed toward space, for no man could live for long on Earth, nor on the planets, without supplies from home.

He guided the small experimental ship toward the border of the interstellar wastes. For only there was it safe to apply the drive. And he must find an earthlike planet for himself, and for his passenger.

A month beyond Pluto, he touched a switch. The Chancellor began listening to the field-song of the cosmos, the song whose notes were written in the universal tensor-point field which bound the continuum into one. To the Chancellor, as to the men who designed it, the field with its eddies and whirlpools was the only "reality" of the universe. The Chancellor listened to the notes in the vicinity of the ship.

Barry touched another switch. The Chancellor spoke. Its voice contradicted the field, offered an equal and opposing one. The "reality" which bound the ship to its continuum ceased to exist in one small patch of space. The ship became disassociated, became a universe unto itself, existing as a distinct and complete four-space continuum bitten out of five-space. And the velocity of light was the parameter of five-space, according to the Burnarr-Origé mathematics. Driven by an electrically charged hull, the ship was attracted toward higher values of the fifth coordinate, and higher values of its parameter.

Outside the cabin, the star-studded void seemed to collapse about him into a luminous ring that encircled the ship. But Barry knew that it was not the same cosmos; it was only a projection of its mass at a higher level—a four-space component of five-space. He started the rockets and set the acceleration at one-point-three gravities. Because of the temporal-transforms, the "home-universe" was aging four hours every time his watch ticked at the higher "W"-level. But an inch of length at his new level was worth 14,400 inches at his old. When he dropped back to the former level, he would be very late, and very far from home.

He had seen his last of Earth, for the Chancellor's nuclear fuel was limited. He had set his hopes on a blue-white star. Humanity lay diseased and dying, except perhaps for a few alpha-ships that might try to reach the stars by the old methods. Their grandchildren might arrive, but it seemed doubtful. All that remained was Barry and his "wife;" for despite a deep distaste, he could scarcely think of the only available female as anything but his "wife." She would certainly have to be the mother of a new humanity—if there were to be a new humanity. She gurgled nonsense-syllables in her corner of the cabin.

Barry had always been a crisp, rather cynical test-jockey, with a chilly eye and a slightly mocking smirk. He had clung to his crispness and aloofness, even in the awful horror of his last night on Earth, for the urgency of the situation demanded cool sanity. But now, in the shrunken space of the higher "W" level, he had nothing to do but wait while the jets supplied their steady shove.

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He closed his eyes and pressed his head back against the seat's G-padding. Thus did the cool and emotionless space-jockey begin to cry. He cried silently, and prayed quietly to anything that might be listening. Tears preserved sanity, and there was no one to see him, save the White Idiot. And she was scarcely more than a wild animal-thing amid her long tangled tendrils of black hair.

She had spent most of her mindless life in the subterranean cell of an asylum, and she was a hopeless and congenital idiot. When the city burned, a power failure left her cell in darkness, protecting her from the light-seeking spores of the plague. In darkness, the plague slept like a tropical flower. And she had been the only untouched female he could find on the night of his return from space. There had been no time to look for another.

Her flesh was white and sagging, unmuscled by the lethargy of long incarceration. Her eyes were pale green vistas of emptiness. He tried not to look at her. But she had to be fed and bathed and clothed. And when she gurgled at him. . . .

But nothing really mattered except the Prometheus-fire of human germplasm, carried starward to be reborn and to flame anew beneath the light of another sun—if such were its luck. Barry had no longing to play the part of a Father Abraham, especially when he considered his Sarah. But Man, in the person of Barry Wilkes, was not quite ready to call it quits. He was too fresh from playing the part of Man the mighty, Man the timeless King, Heir of universe and Messiah of the seed of life. He refused to be winked out in the twinkling of an eye, after being so flushed with his own grandeur.

GLANCING at his "wife," Barry thought that Man-the-second could very well prove to be Man-the-mindless, unless the gods of genetics came to his aid. But Barry hoped. And hope was a white narcissus amid the black clods of despair. For Man had arisen once before from mindlessness, from the mud of beastflesh—and not by his own bootstraps. He had done his best to rid himself of brains—by stoning his saints, burning his geniuses at the stake, and crucifying his wisest men. Somehow, Nature had tugged him upward in spite of himself, in seeming defiance of her own laws. Maybe it would happen again.

He sat before the viewing scope, watching the blue-white star gain brilliance in the center of the screen. It was a higher-level component of a similar star in the home-continuum, but it was the gem of hope in the black velvet void. Somewhere upon the outskirts of its gravitational field, the Chancellor would spew him forth into the less distorted universe of his birth. Then his "High-C Tunnel" to the stars would have writhed and spun away like a broken thread in the magnetic winds of the star-lanced cosmos.

The star's call seemed a whispered love-song, murmuring of planets, of life, of warm sun-glow on verdant jungles. But the song was only a thought in the mind of the wanderer. Its lyrics could be lies, and its tune could become a dirge. Behind him, however, the wandering tendrils of the plague were

Fearful Destiny

THE legends of humanity's beginnings are as numerous as the races of man. And all these tales, it seems to us, have the common quality of wistfulness, of the yearning to be fathered and protected and disciplined. But there is nothing wistful about Walter Miller's particular brand of Genesis in "The Song of Vorhu."

It cuts like a scalpel, it sings with the fierce wild beauty of space and suns and the fearful destiny which awaits man beyond the stars. The idea is not new, but you'll remember this story when you have forgotten many others!

—The Editor

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creeping through the decaying garbage of Man's one-time world. There was nothing to do but hope.

The Chancellor winked a light, telling him to prepare for deceleration. Barry spun the plummeting ship by means of its gyros, and aimed its jets at the sun. The Chancellor began its descent through "W," and Barry watched the universe unfold about him.

The shifting direction of the pseudo-gravity awakened the White Idiot. She began whimpering. He gave her a cool glance, which she returned with the bulging blue-green eyes.

Suddenly she screamed. The scream pleased her: she grinned widely and did it again. Then she began a chant. "Hungy hungy hungy hungy. . . ."

He tossed her a handful of puttylike space-rations. She fumbled with them awkwardly, but there was no time to feed her by hand. The ship was shuddering like a frightened animal in the changing geometry.

He flicked a switch, and the ion-gun began squirting away the charge on the hull. The Chancellor was decelerating its "W" plunge. The luminous ring had spread out to become the familiar scattering of galaxies, stars and star-clusters.

Soon the parameter was equal to "C," and Barry was back in the home continuum, rushing toward the blue-white inferno with enough velocity to shift the fraunhofer lines toward violet. He spurted the jets and held a weighty deceleration, curving off-course slightly so that the ship would eventually move into an orbital path.

THE SOLAR system lay somewhere on the opposite fringe of the galaxy. His "tunnel" had withered and diffused. And a glance at the remaining fuel told him that the Chancellor wasn't going to dig any new ones for him. From now on, he'd be on the plodding alpha-drive. The Red Sea was closed, and he stood before the throne of another star—for better or worse. He infused a name into the new sun, thereby giving it substance in the *lingua ultima* of Barry Wilkes.

He called it Old Man Odds—and it looked like Man's last chance. Odds was the new home, if he had a livable planet.

The cosmos was a fairly roomy palace, but it was rather thinly scattered with monarchs. The germ of life was scarcer than ways to destroy it. Man's space-gnats had never found him another home. He'd built himself shacks on the planets of Sol, but he'd never released the umbilical cord that tied him to Mother Earth's industry. The cord fed him water, air, germ-suits, food, or heat, depending on the shack.

Old Man Odds would have to show a cozy, watery planet with edible life forms. And if Man were to remain Man, and not evolve into something else, the new berth would have to be pretty much like the old one. Otherwise, the sons of men might develop side-staring eyes or taste-buds between their toes—to adapt to some weird local conditions.

Barry refused even to consider the disturbing question of the White Idiot's fertility.

When, at last, the ship had lost its furious velocity, he turned into an orbit and began the search for planets. He moved the scanner away from Mister Odds and swept it across the heavens.

A dull speck crept across the scope. A planet, but too far from the sun. Unquestionably a cold and lifeless world. For life was a function of sunlight.

Mister Odds was larger than Sol, and his "life-belt" would be further from his fierce heat. Barry took some brightness readings, and calculated the distance at which Man might exist without either freezing or roasting. The belt lay between sixteen and thirty light-minutes from the sun. Hopefully he swept the area with the scanner.

Two planets lumbered through the region, massive bodies, several times the size of Earth. They suggested belly-sagging gravity. They suggested the

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future shape of man—stubby legs, basin-shaped pelvis, short thick torso. They suggested a brief life-span for Barry and the White Idiot.

Just sunward from the life-belt lay a ring of planetoids, like the asteroids of Sol, but larger. Some appeared to be as large as Earth. But the intense radiation that fell upon them would make even the poles a tropic hell of heat.

He left the ship in the drifting orbit and began charting the entire sun-system. After a week, he had a rough map of the planetal paths. And he had something else.

He had a lurking suspicion that Barry Wilkes was not the only intelligent being in the realm of Mister Odds. . . .

THE EVIDENCE came from his radar equipment. Stray blips occasionally appeared on the screen. Not transient interference, but orderly pulses. They always disappeared before he could get a fix on their origin.

He saw no evidence of space travel. The pulses evidently came from a planet. He tried all the radio bands. At first, no results. Then, a strange signal in the ultra-high-frequency range. . . .

DONG . . . DONG . . . dong . . . dong. . . .

A series of bell-tones impressed upon a carrier wave. They became higher in pitch, and higher, until they passed the upper audible threshhold and into the super-sonic region.

He sat transfixed, listening, waiting. After a moment the series repeated itself.

DONG . . . DONG . . . dong . . . dong. . . .

Chilled, he forced himself to move. He set up the direction-finding equipment. It was ready when the chimes began again. He watched the bright green pointer move jerkily around the scope until it intersected a planet's bright speck. There it wavered—and stopped. It was the outer planet of the life-belt.

He drifted aimlessly for a time, wondering about the bells. They were too monotonous, too repetitious, for communication signals. But they were too orderly to be an accidental phenomenon. They spelled intelligence.

Human intelligence?

He studied the planet, and grimly choked down his foolish sprouts of hope for beings remotely human. Life was always specialized to fit a set of conditions. Man was fitted to Earth or Earth-like planets. While the lumbering monster on the screen was a double-gravitied hulk. Its day—he guessed it at twelve hours. Its rapid rate of precession insured a glacial age every few years, if it had water for the glaciers.

Nevertheless, he moved cautiously toward it. If it had life, *he* was the alien, the monster out of space. How would the life-forms react?

How would earthlings have reacted to a wandering being from the interstellum, a being who was searching for a home, a being who would accept neither subservience nor equality, but demanded mastery as the divine privilege of his race? Earthlings would have disarmed such a being, if possible, and confined him to a zoo.

Barry shivered as he drew near the planet. He was weaponless, except for a machine-pistol, and the ship's ion-gun which was potent only in the vacuum of space.

The planet had a blue-tinged atmosphere. As he moved closer, he saw streaks of clouds. He set the warning equipment against the possible approach of space-vessels, then swung the ship into an orbit for further study of the world.

There were oceans, sharply outlined by dark land masses. He listened again to the bell-signals. They were not from a localized source, but seemed, rather, to come from several points on the surface. He recorded a series of them.

Then he tuned the ship's transmitter to the carrier frequency. With anxious misgivings, he fed the recorder's output into the transmitter's modulator. It

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seemed the only way to contact the source without exposing himself to the grave danger of a landing upon the unknown. He listened tensely as the bell-tones went back down to the planet.

DONG . . . DONG . . . dong . . . dong. . . .

When it was done, he cut off the carrier. His receiver was roaring an unearthly din. Sheer havoc followed his transmission. A jumble of bells from all over the planet. They came furiously, high notes, low notes, dissonant chords, booming and tinkling and fading away.

What had he done! He cursed himself for a fool, a child, poking a pair of scissors into a light socket.

Gradually, order was restored. Slowly, the pulses rearranged themselves. After several minutes . . . dong . . . dong. . . .

And, something else as well.

AT FIRST, he seemed to hear a faint buzzing sound throughout the ship, like the dry hisses of a startled rattlesnake. But the microphonic pickup showed only the whine of the jets and the ringing of the bells.

The buzzing was internal, a ringing in his ears, a self-sound, like the effect of too much quinine, or an accompaniment of dizziness. An *emotion* seemed to pervade the buzz. Anger!

But not his anger. He felt only the cold, gnawing teeth of fear along his spine, as he stared down at the hazy world. His mind seemed to writhe, as if something or someone were pecking at the thoughts that lay buried beneath the level of consciousness. He felt invaded, not alone.

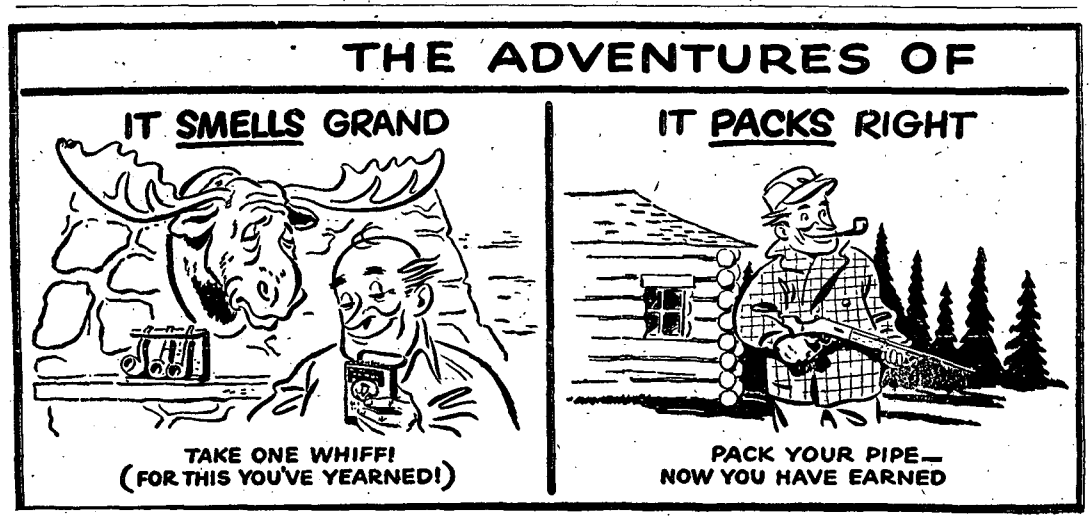
He glanced around the control room suspiciously. The White Idiot was shrieking gibberish. Did she also feel it? He pressed his hands over his face. Memories, nonsensical, unwanted memories, danced willy-nilly through his head.

Suddenly, he was released from the thought-pecking. He sat breathing heavily. He shut off the radio to kill the monotonous bells. Well?

No pulse from the warning system. No signs of space-craft. No airships among the clouds. No visible activity on the surface. Nothing.

Had he imagined it? He scoffed at himself, goaded his mind back to calmness. The buzzing? The feeling of intrusion? Fear, superstitious fear, man standing before the strange, man looking at the unfamiliar. There was no other possible explanation.

He blasted the forward rockets, decelerated, and went into free-fall until he touched the first thin layer of atmosphere. Then he unfolded the ship's wings and leveled off slightly, still los-



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ing altitude.

An air-sample showed a breathable mixture of gases. The gravity was ponderous, but endurable. The planet's habitability would depend upon its life-forms, their edibleness, their intelligence level, and their affective attitude toward visitors from the sky. With a slight chill of anxiety, he realized that he might even at the moment be helplessly in the power of whatever lived on the surface.

But the surface seemed homogenous, for the most part. It was a dull gray-green, laced with yellowish veins that looked like designs on a dusty maple leaf. There were no forests or mountains, only gentle hills and valleys in the gray-green blanket. And the calm sea.

He descended over the sea. Its surface was glassy, clear, bright green. Shadow-shapes moved beneath it, darting aimlessly here and there. Marine life, possibly edible. He circled several times, then flew toward a distant shore. The land-mass—it would pass the final sentence.

Green cliffs loomed up before him. They were overhung with massive roots or tentacles growing down into the sea. But he saw no trees upon the land. The roots grew out of the cliff itself.

Then he was past the shore, flying over the barren, billowing ground. It seemed to move in slow land-tides, as if it were an extensive floating island. But it was smooth, rockless, unbroken.

Where was life?

He circled for a landing near the sea . . . the sea, where the tentacles grew, and the shadows lurked, where edible things might be found along the beaches; where man might grow . . . and wax strong again?

He fired the landing rockets and settled slowly. The ground cushioned inward elastically when the ship rested upon it. He strapped the White Idiot securely in place. He ran a final check on the air, the temperature, and the gravity.

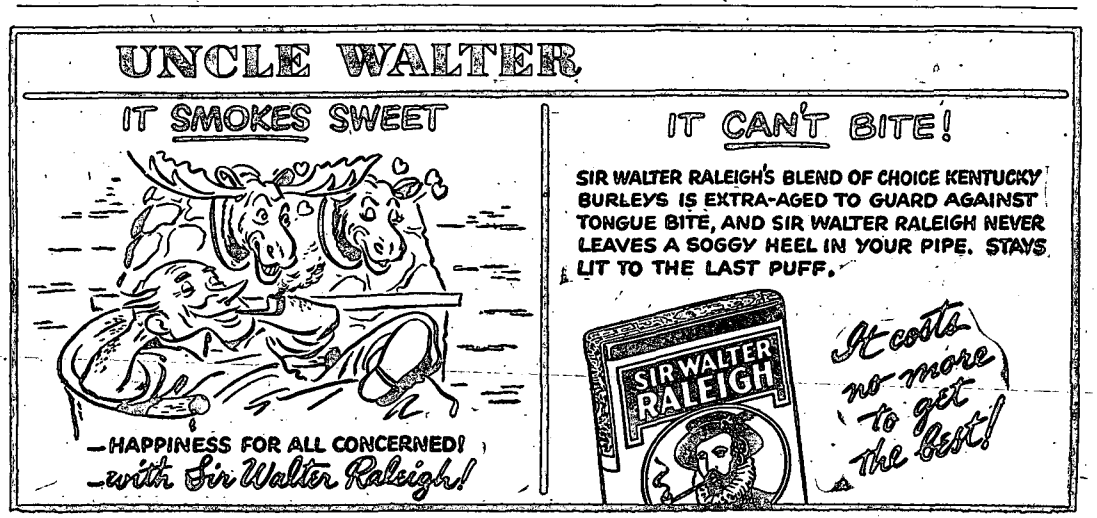
Then he strapped the pistol belt about his waist, stepped through the pressure lock, and opened the outer hatch. It was only a four-foot drop, but he lowered himself carefully because of the double gravity. The ground was rubbery beneath his feet. He looked around.

His ship was near a ridge, one of the yellowish veins he had seen from above. . . .

THUP! A muffled throb—from beneath the surace. The ridge had pulsed . . . like an artery.

THUP! Another throb. It came faintly from the distance, like an echo, but an octave higher in pitch.

[*Turn page*]


UNCLE WALTER
IT SMOKES SWEET
—HAPPINESS FOR ALL CONCERNED!
—with Sir Walter Raleigh!
IT CAN'T BITE!
SIR WALTER RALEIGH'S BLEND OF CHOICE KENTUCKY BURLEYS IS EXTRA-AGED TO GUARD AGAINST TONGUE BITE, AND SIR WALTER RALEIGH NEVER LEAVES A SOGGY HEEL IN YOUR PIPE. STAYS LIT TO THE LAST PUFF.
SIR WALTER RALEIGH
It costs no more to get the best!

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Was the very *earth* alive? A huge vegetable mass covering a continent—or floating on a subterranean sea? He knelt to examine it. The surface was tough, leathery, and gleaming dully in the sunlight. He scored it with a knife-blade, and found it tough, like waxed leather. He drove the blade in to the hilt, but found no moisture.

He arose, and fired a burst of bullets into the substance. Neat, round holes. Then, as he stared, the lead slugs oozed back out of the layer. A thick green paste followed them. It coagulated in small puddles.

For an instant, he felt the rattler's hiss again. It passed quickly, however. The periodic *thups* continued.

He stooped to touch the dried fluid, but it had hardened to a glassy consistency.

The ground *was* alive!

It was also obviously inedible.

If the planet were to serve the race of man, food must be found. Man, not yet weaned from Earth, must find somewhere a breast to sustain him.

HE WALKED away from the ship toward the ocean which murmured faintly from half-a-mile in the distance. The earth was an unbroken expanse of green leather and yellow ridges. He climbed a ridge and stopped in surprise. Below, lay a white spot in the green. It was moving, bulging, swelling upward. It became a pale, translucent dome, growing slowly but visibly. He drew his weapon, and lay cautiously down upon the throbbing ridge to watch it.

It became a flesh-colored hemisphere. A dark spot appeared upon the crest. A sudden constriction clutched at his throat. With a shudder, he realized that the hemisphere was becoming. . . .

A breast!

Trembling, he shrank back out of sight, pushed himself off the ridge, and fled toward the ship. The ponderous gravity tugged at his knees. He staggered as he ran. It was as if his feet were shod in leaden moon-boots.

The planet was mocking him. It picked his mind—*a breast to sustain. . . .*

"Hey! Hey, there!"

Had someone called?

Quaking in the icy wind of fear, he plunged on.

"Hey, Barry! Barry Wilkes! Wait!"

He froze, gun in hand, and looked around slowly. A man! Barry saw his head and shoulders just beyond the next ridge. It was a low ridge, and the man leaned on it with folded arms, as if it were a board fence. He smiled a neighborly smile. There was something familiar about him.

"Wh-who are you?" Barry called.

The man shrugged. "Mother sent me. Mother drank your thoughts. Then she made me, so we could talk. Come on over."

Barry stood his ground for a moment. "Mother" had made the thing, unquestionably—and Barry was the blueprint. It had his voice, his thin hard face, even his crew cut.

Caught by a terrible fascination, he advanced upon it slowly, gun in hand. It smiled and lit a cigaret, his own brand. "Mother's" imitative powers were remarkable—or perhaps, her hypnotic powers.

He moved to a point on the ridge some twenty feet away. The being had been between him and the ship. Now he had a clear escapeway.

"Don't get around behind me," the creature called. "I can't turn very well."

Straddling the ridge, Barry stared at the man. It was imbedded to the waist in the gray-green earth. It was only half a man, the half necessary for sucking in air and breathing it out as words. She had made him for talking—but why had she given him arms, very muscular arms?

Barry eased himself down on the ship-side of the ridge.

"Oh, all right," the creature said good-naturedly. "I'll turn around. You're certainly suspicious."

As if stuck in quicksand, it dragged

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itself slowly about to face him. Barry kept the pistol trained on its face.

"You *are* suspicious, aren't you?"

"Listen, I don't know what you want," Barry growled, "but I'm perfectly willing to leave. Just stop picking in my mind."

It nodded. "Certainly. Mother has already assimilated your memory."

Barry eased his way toward the next ridge, glancing around to make certain that no more of the beings were springing up.

"There's no reason to be afraid," the creature said. "Stop and think. It's obvious that Mother didn't send me to get information from you. Nor to molest you. I have no legs."

Barry hesitated. Perhaps it would be better to face it and see what the thing wanted.

"Stay out of my mind," he warned.

It chuckled. "Mother drinks your thoughts only when you feel *this*."

Barry felt the buzz for a brief instant. Again, it seemed to connote anger, anger as strong as when he had retransmitted the bell-notes.

"There," the thing said with an acid twinkle. "I've told you. And now you can shoot her if she does it again."

Barry watched it warily for any threatening movement. The being's torso pulsed and twitched with each of the subterranean *thups*.

"What are those vibrations?"

"They are Mother's—" The thing paused to grope for a word. "Mother's hearts. They communicate with each other, so that each may beat at the proper time."

It was undoubtedly telling the truth, Barry thought. The revelation explained the havoc resulting from his retransmission of the bell-tones. Many hearts, beating out of proper sequence.

The being drew a last puff on the cigaret and flipped it aside. Then it rubbed its hands.

"Well, Barry, suppose we get down to business. Mother, of course, knows why you're here and what you want. I've come to make you what we think's a reasonable offer."

MAN, standing on the open palm of an alien being, and speaking to a mirror image of himself—he could scarcely afford hysteria at such a time. He stood stiffly, waiting.

"Go on."

"Very well. You're looking for a place to live and to reproduce your kind. Mother knows your needs and knows that this is the only suitable world in this system. You don't have much choice. But this planet can be your home."

"What's the price?"

"A service you will perform. Mother has grown too large for this world. But she can't leave the planet. You can carry her seed to other worlds."

"Why can't you do it?"

"I'm not detachable."

Barry paused thoughtfully. The offer was unacceptable, at least until he learned more about the being, its traits, the extent of its power. One thing was certain: it knew *his* traits, the traits of his race, the savagery and the sublimity, the tribal self-centrism, the Messianic claim to first rights to the throne of universe. It knew—yet offered to share its planet. It felt secure before the last remnants of Man. Why?

Barry stiffened his shoulders and swallowed the dry sponge of fear that swelled in his throat. If the thing was telling the truth, it wouldn't destroy him before it tried to get what it wanted. He tucked the pistol back in his belt and advanced toward the half-man. He sat on the ridge, for the gravity was weakening him quickly.

"My race needs shelter and food," he snapped. "There's nothing here." He waved toward the empty landscape.

The thing smiled confidentially, craftily. "There is Mother," it said, and patted the gray-green ground.

A proturberance appeared where his hand had touched it. The sprout writhed slowly upward, like a cobra

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slithering out of a Hindu's basket. It sprouted and spread and branched out into a leafless bush. Two white buds squeezed themselves out at the ends of twigs. They unfolded into blossoms, turned their faces toward each other, then moved lazily together in a light kiss. They withered, and the petals rolled back to expose tiny green knobs.

As Barry watched, the knobs swelled and ripened into a pair of pink fruit with light brown speckles.

"Try one."

"No, thanks." Again he felt that the thing was mocking him, teasing him by psychodrama—the legend of *Bereshith*, Genesis, the first temptation of Man. Its whims were grotesque.

The half-man shrugged and touched the bush. The fruit shrank. The branches folded. The earth sucked it slowly down, drawing it back from whence it came.

"You see, at least, that food can be provided," the creature said with a slight leer.

Barry slid from the ridge and snorted at it contemptuously. He drew the pistol again.

"You can give," he growled. "But you can also take away."

"You have no choice. There's no other planet."

Barry backed away from it, cursing softly. "My race makes no deals. You know my mind, you know our history. We serve no one."

The creature laughed contemptuously. "Except emperors, tyrants, even marble statues."

Barry turned away and staggered toward the ship under the load of his own weight. He heard several sharp clicks behind him. He whirled quickly.

The thing was holding an exact replica of his own machine-pistol. It jerked frantically at the trigger. Barry crouched reflexively. Then he straightened with an angry laugh.

"I forgot to tell you," he snapped. "I never learned how to make explosives."

He fired a burst into the being's chest. The air-sac spewed green fluid. The half-man dropped the useless weapon and clawed at the ground. The "mother" began giving birth to something that looked like the head of a spear. Barry shot a burst in the creature's face, destroying the eye-mechanisms.

Then he bolted for the ship.

A HOST of protuberances appeared ahead of him. They sprouted, and grew slowly into a tangle. He dodged and zigzagged. A green hand caught at his ankle. He jerked free and drove onward against the heaviness.

A web of tough green tentacles had belted the ship securely to the ground. He blasted at them. They wriggled, but stayed in place. A few had grown through the air-lock and had opened the inner hatch. *If they had harmed the White Idiot. . . .*

"I'll kill you!" he shrieked at the endless expanse of the world-creature.

He tugged at the tentacles in the hatchway and crawled among them into the ship. They curled toward him, but their motion was blind and fumbling. He eluded their snares and pulled himself toward the control room.

Someone was in the ship!

A nude woman stood by the radio equipment. She was stripping away panels and jabbing a heavy wrench into the tube-housings.

"Stop!"

She glanced around, smiling. She was a composite—the body impossibly perfect, fashioned out of the dream-fabric of a lonely space-jockey, a thousand lightyears from home. The face was a blend—a bit of the first love, and a bit of . . . his mother.

He raised the gun toward the green beauty.

"Would you shoot your mother, Barry?"

The rich voice—it was the voice that had soothed him in childhood. Her face—it changed, slowly. It *was* his mother's. But the body remained. . . .

He laughed hysterically and shot a

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burst of bullet holes up its spine. She sagged, gasping, against the radio.

"Barry, Barry darling. . . ."

Her calm face! She was unharmed. Pure dramatics, meant to unhinge his mind!

Her soft bare arm reached into the hollow of the set and tugged at something. Then he saw the cord—like one of the tentacles. It was attached to her abdomen, and it ran across the floor and out of the ship through the air-lock.

He aimed carefully, and shot it in two. She dropped. He dragged her to the hatchway and tossed her among the green feelers. They blindly mistook the body for his own. They curled about it, snakelike, dragged it from the ship, and began to absorb it.

He slammed the hatch, bolted it, and hurried to the controls. The White Idiot was whimpering softly and trying to reach part of a brown-speckled fruit that lay near her on the deck. He kicked it away from her, then sat in the control-seat.

THINGS were happening outside. He glanced through the imperviglass shield. The ground was caving in beneath the rocket. The space-craft was sinking into an ever-deepening pit. He tried to start the jets. The ignition blinked, and there was a brief blurp from the reactors. But no fire from the tubes. A relay clicked and the ignition went dead.

The tubes—they were choked off. By the tentacles, of course! They had grown inside and formed a tight cork. To continue trying to start the jets would soon build up a critical mass in the reactors and expand him suddenly into an atomic mushroom.

And the world-creature with him, perhaps. . . . But that was not the way.

The ship had sunk until the gray-green substance half-covered the imperviglass shield. He could feel the pulsing heartbeats through the insulated hull. They were being devoured alive.

The heartbeats. . . .

He moved quickly to the radio equipment and inspected it. The woman-thing had shattered several tubes. He replaced them from the stock of parts, and tried the set. The tubes came alive in a dim glow. She had not harmed the other circuits.

The bell-tone recording was still in place. He fed its signal into the transmitter.

DONG . . . DONG . . . dong . . . dong. . . .

The tiny space-craft shuddered. Suddenly the ground heaved like a storm-tossed sea. The violent heaving threw him to the deck. He crawled to the controls.

The tentacles were loose from the hull. They slashed about wildly in the air, whipping against the view-shield with savage cracks. He hit the jets. This time they spurted. It was a rough, erratic take-off. He climbed quickly out of the planet's atmosphere.

Numb with trembling anger, he set an orbital course about the world-creature's home. The transmitter still poured out the resounding bell-tones, the electromagnetic nerve-signals, the echoes of the heartbeats. After two hours of it, he listened for the thing's response.

Silence. Empty silence.

"Mother" had had a heart attack.

He moved spaceward again, and set his sights on the inner planet of the life-belt. But it proved unnecessary to approach any closer than the outer fringes of its atmosphere. The air was choked with ammonia vapor.

He moved on, wandering aimlessly. The monster was right. There were no other suitable worlds in the system. He and the White Idiot were marooned on a barren island in an endless sea. Between Mister Odds and the next star lay fifty light-years of emptiness. His rocket-fuel was too low for the search.

Should he have accepted bondage in the land of the world-creature—indentured himself in slavery to the grav-

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green Pharaoh?

The White Idiot kept howling for the remains of the brown-speckled fruit. Evidently one taste had been enough to start a craving, a terrible gnawing hunger for the food the woman-thing had given her. Man would have been enslaved indeed.

Would it have been better than death?

Who could answer him? Who could judge the decision he had made? It was for Man, the yet-unborn, to judge—for Man, the forever-dead, to judge. But the judge was silent. And the question remained.

Was Barry a traitor to the race?

The voice of his thoughts sat in the judgment seat. Thoughts, thoughts from childhood, thoughts from manhood, voices and memories, words, words, words. Alice in Wonderland. Soliloquy from Hamlet. The Psalms of David. . . .

What is Man that Thou art mindful of him? Or the son of Man that Thou visitest him?

Barry went out wavering into the interplanetary gulf. Hot moisture clouded his eyes.

Slavery?

If Man could not occupy the throne, if Man could not wear the crown, then it was better for him to die. The End.

No more spires, rising toward the blue of heaven. No babies wailing in their cribs. No war-drums to throb in the steaming jungles. No ships to clog the spaceways, nor priests offering bloody sacrifices to tribal gods. Dead. Dead was the inscrutable, unbelievable creature called Man. His savagery had shocked the very Earth that bore him. But his gentle dignity made dumb brutes lick his hand in homage.

Barry looked spaceward.

A cold, slow, sleepy death in the interstellum. A wandering ship, rocket heat gone, drifting forever. Until some nine-legged archeologist from Arcturus perhaps, cracked it open to look at the remains.

Barry looked toward Mister Odds.

A beautiful, gleaming inferno of hell. A seething explosion that never ceased. A sudden plunge into the blinding light, then—to wander as scattered neutrons in the vast furnace.

GRADUALLY he killed the tangential component of his velocity. The ship stood still in the star's silent glare. Man knelt before the behemoth and surrendered with a shudder. But it was the behemoth of universe, not an alien intelligence.

The ship drifted, slowly creeping sunward, then moving faster, beckoned by the siren voice of the gravity-song.

He looked at the White Idiot in pity. Her bloodless lips moved ceaselessly, silently, meaninglessly. He went to kneel beside her.

"Dadda dadda dadda. . . ."

He did something he had never done before. He took her pallid, pathetic face between his hands and kissed her lightly. Then he backed away in horror. Her skin was flecked with dark spots, greenish black.

The plague!

In the dark night of space, it had lain dormant. Now, in the light of the new sun, it blossomed forth, to thrive in the ultraviolet bath.

He shivered slightly. In perhaps a day, her body would swell, then burst, to spew forth a cloud of the plague spores. The spores were the unconquerable contagion.

Angrily he spun the ship starward and set the rockets thundering. It leaped ahead like a thrown javelin. He grinned into the blinding light.

"Good morning, Mister Odds!"

The heat became unbearable as he approached the planetoid belt. He started the refrigerating mechanism. It worked for a time, then developed a vapor-lock. The heat increased.

A dark mass loomed up on the screen.

He lashed out instinctively at the braking rockets. He veered sharply. The gravity of a small planetoid tugged

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at the ship as he plunged past it. He sat breathing heavily for a moment, then picked a careful path among the scattered bodies.

Careful . . . lest he die the wrong way. He smiled sardonically. Man—strange mating of beast and angel. A snarling gorilla still wanted to live. A weary spirit wanted to quit.

The White Idiot was wailing softly. She had entered the painful stage of the disease. Soon she began screaming and clawing at herself. Barry knew. He had seen the plague on Venus. The thin green tendrils were lacing through her flesh, feeding here, feeding there, then wandering experimentally along a nerve to gnaw at the substance of the brain. Green piano-wires, sewing themselves between her joints, digging in, running along the marrow of her bone.

A bullet would be easier.

Thoughts . . . the voice of his thoughts . . . and the judgement. . . .

Thou hast made Man but little lower than the Angels. Thou hast subjected all things under his feet.

All things—except the life of Man itself. She had drunk Earth's chalice. And though the chalice was shattered, the wine was not yet wasted all away.

He put the gun back in his holster and tried to close his mind to her shrieks.

What right had he to seek the white-death, in the heart of Mister Odds? He hovered in doubt.

A larger planetoid was lumbering along its orbit toward him. He swung in ahead of it, then began decelerating. Slowly it overtook him, and its gravity tugged lightly. He let it drag him back. He watched it drift larger on the screen. He waited.

IT WAS nearly as large as Earth; but its face was misted by clouds. It would be hot, boiling hot. It had a small moon at half a million miles. The moon's pale face was sharply outlined against the blackness; like Luna, it had no atmosphere.

Barry guided the ship toward the planet's northern pole, where the temperature might be endurable in a space-suit. The pole was inclined away from the star, and it would be a long winter's night on the surface.

When he reached the atmosphere, he chuckled bitterly. The air was breathable, and the gravity was nine-tenths that of earth. The planet's day appeared to be about twenty-two hours. In a billion years, when the sun had cooled slightly, the place might be inhabitable.

He dropped beneath the cloud blanket into the night of the polar region. But the night was amber with the glow of volcanic fires. He landed on a barren stretch of igneous rock, and checked the temperature at 130° F. A steam-bath, but not much worse than the interior of the ship.

He gathered the White Idiot in his arms, opened the hatch, and climbed out onto the rocky face of the planet. The glowing clouds were lighted from beneath. The air was full of fumes from lava blow-holes that spewed yellow streamers of smoke toward the sky. A hot drizzle was falling about the ship. Puddles of steaming water lay ripple-less in the cloud-glow.

Barren, young, desolate, the planet lay lifeless beneath the blue-white sun. There was no soil to support plant life. Without plant life there could be no animal life. And the equatorial temperatures would be boiling.

He laid the White Idiot gently in a shallow, steaming pool—for the igneous ground was razor-sharp. The hot water would soothe her tortured flesh. She jerked spasmodically and panted in short screams. Her bulging eyes sought him out, pleading. His hand twitched toward the butt of the pistol. . . .

But the voice . . . the voice of judgment . . . *behold the thing the Lord God made to have dominion. . . .*

Bereshith!—so it was in the beginning.

Bullets—they would not be the end.

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Haunted, he turned away from her. Choking, he ran toward the ship. If he stayed, he would surely. . . .

The screams stopped. He paused, turned slowly, as Lot's wife. She was craning her neck, looking down at herself. He approached her again. And saw it.

A thin green tendril had grown from the flesh beneath her clothing. It groped toward her face, like a climbing vine seeking sunlight. She watched it hypnotically. It swayed like a curious cobra.

Then it found her throat.

"Uh . . . uh . . . uh. . . ."

He staggered blindly, lifted the pistol —and squeezed. He fired until the clip was empty. The body jerked and rolled under the impacts. The pool became bright red.

He dropped the gun and stumbled back to the ship. He slammed the hatch. He must not look back.

But the pool loomed up through the imperviglass.

. . . from the mud of Earth, and into his nostrils the breath of life. . .

Ripples wandered across the shallow water. The body rose and fell, caressed by the warm pond. Lullaby. Goodnight.

Suddenly the White Idiot opened. The wiry tendrils burst forth, like a sackful of loose threads, after the manner of the plague. They shook themselves, a flurrying dust-mop, scattering a cloud of faintly visible spores into the humid air. Then they wilted slowly downward, collapsed, lifeless into the pool. The dust spread, settled, dulled the surface of the water.

He tried to stop babbling aloud. God, why couldn't he stop! The cries in his throat—they were no longer his own. No control! He clenched his jaws. The sound became a nasal whine. He held his breath. Blackness loomed. The breath came out a shriek.

He talked. He knew he talked. But what was he saying? A senseless chatter. Where was sanity? But he could still *think*. He had to get away. Away from the new planet baptized in blood before birth. He blasted the rockets, roared upward, outward, spaceward.

DON'T look at me, Mister Odds."

He closed the view-shield, cutting off the sight of empty cosmos. He set a clumsy course around the planet. But the moon-gravity dragged him out of the orbital path.

So, he landed on the satellite, at the pole, where Mister Odds was sliced in half by the sharp rim of the moon-disk. He sat waiting . . . for nothing, his eyes irresistibly drawn toward the planet upon the opposite horizon. On his left —the white eye of God. On his right—the pallid corpse of Abel.

"It was mercy." Another five minutes and she would have been dead. Mercy was a prerogative of Cosmos.

"A moment of insanity." The Cosmos had no throne for mad monarchs.

"A crime, a final act of unworthiness." So be it, then.

What was the flavor of the speckled fruit? And the flavor of life upon the planet of the world-creature? The world-creature, who fashioned an exquisitely lovely woman for him—from the blueprint of his dreams. The massive planet could have been a garden in paradise. A paradise now unquestionably lost. He was glad.

Forget, and die.

If only it could happen again—the upward march of Man—from the protoplasm left up on the planet. *Something* would happen, surely. Mister Odds would grow old and kindly. The mists over the White Idiot's grave would part—and fall as rain. Lakes, then seas.

The seed was planted—yeast cells, bacteria of fermentation, disease germs, vegetable spores, and the body of the Idiot to nourish them. Most would die. The hardy might survive. The spores had chlorophyll to convert sunlight and raw minerals into food, food for animal cells.

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Bereshith. . . . In the Beginning.

But Man?

One of the gray locksmiths, one who had sought after the grail, the key of life, had said that wherever there was a sun and an earthlike planet, there Man would come. . . Man, or something very manlike. For he said that Man was an inevitable end-product of the life-forces, the logical conclusion to a search for adaptability.

No one had ever found another earthlike planet. It was a safe thing for the locksmith to say.

BARRY wrote. He wrote to quench the oral flow of words, the babble of threatening insanity. He wrote a sketchy history of Earth, of her kings and prophets, of her warriors and her locksmiths—and of her last space-jockey and his mad flight to the stars. He wrote of the White Idiot, and of the faint hope of the cells and spores. When he ran out of paper, he scratched words on the metal walls with the point of a knife.

Then he ran out of words, and out of food.

He donned a space-suit and walked out into the faint gravity of the moon. He walked until he was several miles from the ship. But he was still in the ship's shadow.

The surface was rough, pocked with blow-holes where bubbles of hot vapor had spewed forth from the once-molten body. He glanced down one of the lightless cavities. An icy maw of death, mysteriously deep.

Where the sun struck the moon's face, the surface was warm. But in the black shadows, there was no heat.

How deep was the narrow hole?

He stepped into it. Gravity wafted him slowly into pitch blackness. When he had fallen twenty feet, he realized vaguely that it was deep enough to prevent escape. He dragged his feet and arms against the narrowing walls to prevent a killing crash. But the satellite's gravity was only a gentle breeze.

How deep?

It seemed an endless tunnel into a cold hell. He shone his flash downward. Far below . . . a gleam of white. A puddle of liquid helium perhaps. He checked his wrist instruments. The temperature was low and meaningless. But there was a slight vapor-pressure. The white puddle was unquestionably liquid gas.

He began deflating his space-suit, to make death quick. He clutched at the shaft's walls, pulling himself to a stop in a narrow place. Then he took off the suit.

A shock of cold. Bursting eardrums in the low pressure. Then he was falling. He sank into a dull half-faint as he approached the bottom. Blackness was merciful.

A sharp sear of pain lanced through him, and persisted like the constant burning of an electric shock. It died suddenly, to be replaced by a shrieking ache that pulsed through every bone and nerve. He jerked, twisted and found that he could move.

He opened his eyes. He was lying on a metal pallet. A helix of gleaming metal spiralled about him, like the coil of an induction heater. He breathed painfully, and tried to stop. But something was forcing him to breathe, pulling his ribs out and in.

Daylight filtered through a mental fog. The dying whine of a generator howled in his throbbing ears. Then a voice . . . a human voice . . . incomprehensible words.

THEY SLID him gently out of the coil. Consciousness faced again. Awareness was a light bulb, loose in its socket, flickering on and off erratically. Once, when he opened his eyes, the room was dark except for yellow moonlight coming through the window.

White-garbed figures moved about him. Needles pricked his arm. He was bathed in rays, covered with blankets of frosty powder. Sometimes he saw faces through the mist that screened his

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senses. Long thin faces with large clear eyes. Human faces, or at least humanoid. A handsome people.

They tried to speak in sign language. But he babbled in weak whispers. From his mutterings, and from bits of writings found upon an airless, weatherless moon, their linguists pieced together a knowledge of his tongue. They talked.

They told him that he had planted the first seed.

Once he mumbled that it was the murdered seed of Abel, and they bowed gravely in sympathy.

The sons of the White Idiot struggled valiantly to save the corpse that they had plucked from a deep-freeze on their planet's moon. But the flicker of life waxed and waned in weak tides.

They said they had made a mistake. They had taken him out too soon. Perhaps if they had waited and studied for another century. . . .

Dead a billion years, he came alive to die again.

Sometimes, during rational moments, he questioned his awakeners, one of them in particular. A girl, with large, rust-brown eyes, and a wide soft mouth, and a close-cropped brush of bright black hair. She told him stories of the planet.

Sometimes he could see her warm, expressive face, and could understand her words, spoken in the soft hiss of English newly learned.

"There was an ancient legend among our people, Barry Wilkes. It told of the god, Vorhu, and his consort, Ndriga, who fell from his arms in heaven and plunged down through the Northern Lights. Vorhu came to bury her. But the pale blue Alononu blossoms had grown from her body and spread across the planet."

She patted his arm and smiled faintly. "Our people once identified Vorhu with the moon. They piled his altars high with the night-flowering Alononus."

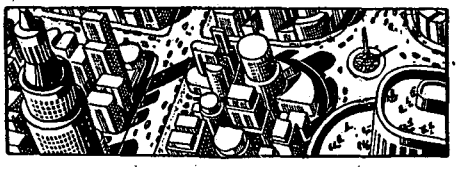
But Barry's mind was dulled by the eons. Her stories came to tire him. Once he wondered vaguely if she had been made by the world-creature.

They told him he was dying, for it was their custom to greet death gravely and politely.

They gave him the last sacrament of their people, a rite reserved for the high space-warriors of their nation. And they moved him to the window where he could see the white vapor-trails that streaked the sky in martial formation, as if honoring the passing of a kind.

But his vision grew dim.

The girl brought a basket of blue Alononu blossoms and scattered them over his pallet. Then she chanted the Death Song. And it told of the soul's final merging in the spirit of the race of Man. *Bereshith.*



Next Issue's Science Fiction Headliners

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ABERCROMBIE STATION by JACK VANCE

THE REGAL RIGELIAN by KENDELL FOSTER CROSSEN

SURVIVAL by JOHN WYNDHAM

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KEYHOLE

By MURRAY LEINSTER

THERE'S A STORY about a psychologist who was studying the intelligence of a chimpanzee. He led the chimp into a room full of toys, went out, closed the door and put his eye to the keyhole to see what the chimp was doing. He found himself gazing into a glittering interested brown eye only inches from his own. The chimp was looking through the keyhole to see what the psychologist was doing.

* * * * *

WHEN they brought Butch into the station in Tycho crater he seemed to shrivel as the gravity-coils in the air-lock went on. He was impossible to begin with. He was all big eyes and skinny arms and legs and he was very young and he didn't need air to breathe. Worden saw him as a limp bundle of bristly fur and terrified eyes as his captors handed him over.

"Are you crazy?" demanded Worden angrily. "Bringing him in like this?

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Would you take a human baby into eight gravities? Get out of the way!"

He rushed for the nursery that had been made ready for somebody like Butch. There was a rebuilt dwelling-cave on one side. The other side was a human schoolroom. And under the nursery the gravity-coils had been turned off so that in that room things had only the weight that was proper to them on the Moon.

The rest of the station had coils to bring everything up to normal weight for earth. Otherwise the staff of the station would be seasick most of the time. Butch was in the earth-gravity part of the station when he was delivered and he couldn't lift a furry spindly paw.

In the nursery though it was different. Worden put him on the floor. Worden was the uncomfortable one there—his weight only twenty pounds instead of a normal hundred and sixty. He swayed and reeled as a man does on the moon without gravity-coils to steady him.

But that was the normal thing to Butch. He uncurled himself and suddenly flashed across the nursery to the reconstructed dwelling-cave. It was a pretty good job, that cave. There were the five-foot chipped rocks shaped like dunce-caps, found in all residences of Butch's race. There was the rocking-stone on its base of other flattened rocks. But the spear-stones were fastened down with wire in case Butch got ideas.

Butch streaked it to these familiar objects. He swarmed up one of the dunce-cap stones and locked his arms and legs about its top, clinging close. Then he was still. Worden regarded him. Butch was motionless for minutes, seeming to take in as much as possible of his surroundings without moving even his eyes.

Suddenly his head moved. He took in more of his environment. Then he stirred a third time and seemed to look at Worden with an extraordinary intensity—whether of fear or pleading Worden could not tell.

"Hmm," said Worden, "so that's what those stones are for! Perches or beds or roosts, eh? I'm your nurse, fella. We're playing a dirty trick on you but we can't help it."

He knew Butch couldn't understand, but he talked to him as a man does talk to a dog or a baby. It isn't sensible, but it's necessary.

"We're going to raise you up to be a traitor to your kinfolk," he said with some grimness. "I don't like it but it has to be done. So I'm going to be very kind to you as part of the conspiracy. Real kindness would suggest that I kill you instead—but I can't do that."

Butch stared at him, unblinking and motionless. He looked something like an Earth monkey but not too much so. He was completely impossible but he looked pathetic.

Worden said bitterly, "You're in your nursery, Butch. Make yourself at home!"

HE WENT out and closed the door behind him. Outside he glanced at the video screens that showed the interior of the nursery from four different angles. Butch remained still for a long time. Then he slipped down to the floor. This time he ignored the dwelling-cave of the nursery.

He went interestedly to the human-culture part. He examined everything there with his oversized soft eyes. He touched everything with his incredibly handlike tiny paws. But his touches were tentative. Nothing was actually disturbed when he finished his examination.

He went swiftly back to the dunce-cap rock, swarmed up it, locked his arms and legs about it again, blinked rapidly and seemed to go to sleep. He remained motionless with closed eyes until Worden grew tired of watching him and moved away.

The whole affair was preposterous and infuriating. The first men to land on the Moon knew that it was a dead world.

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The astronomers had been saying so for a hundred years and the first and second expeditions to reach Luna from Earth found nothing to contradict the theory.

But a man from the third expedition saw something moving among the upflung rocks of the Moon's landscape and he shot it and the existence of Butch's kind was discovered. It was inconceivable of course that there should be living creatures where there was neither air nor water. But Butch's folk did live under exactly those conditions.

The dead body of the first living creature killed on the Moon was carried back to Earth and biologists grew indignant. Even with a specimen to dissect and study they were inclined to insist that there simply wasn't any such creature. So the fourth and fifth and sixth Lunar Expeditions hunted Butch's relatives very earnestly for further specimens for the advancement of science.

The sixth expedition lost two men whose space-suits were punctured by what seemed to be weapons while they were hunting. The seventh expedition was wiped out to the last man. Butch's relatives evidently didn't like being shot as biological specimens.

It wasn't until the tenth expedition of four ships established a base in Tycho crater that men had any assurance of being able to land on the Moon and get away again. Even then the staff of the station felt as if it were under permanent siege.

Worden made his report to Earth. A baby Lunar creature had been captured by a tractor-party and brought into Tycho station. A nursery was ready and the infant was there now, alive. He seemed to be uninjured. He seemed not to mind an environment of breathable air for which he had no use. He was active and apparently curious and his intelligence was marked.

There was so far no clue to what he ate—if he ate at all—though he had a mouth like the other collected specimens and the toothlike concretions which might serve as teeth. Worden would of course continue to report in detail. At the moment he was allowing Butch to accustom himself to his new surroundings.

He settled down in the recreation-room to scowl at his companion scientists and try to think, despite the program beamed on radar-frequency from Earth. He definitely didn't like his job, but he knew that it had to be done. Butch had to be domesticated. He had to be persuaded that he was a human being, so human beings could find out how to exterminate his kind.

It had been observed before, on Earth, that a kitten raised with a litter of puppies came to consider itself a dog and that even pet ducks came to prefer human society to that of their own species. Some talking birds of high intelligence appeared to be convinced that they were people and acted that way. If Butch reacted similarly he would become a traitor to his kind for the benefit of man. And it was necessary!

Men had to have the Moon and that was all there was to it. Gravity on the Moon was one-eighth of gravity on Earth. A rocket-ship could make the Moon-voyage and carry a cargo but no ship yet built could carry fuel for a trip to Mars or Venus if it started out from Earth.

With a fueling-stop on the Moon though the matter was simple. Eight drums of rocket-fuel on the Moon weighed no more than one on Earth. A ship itself weighed only one-eighth as much on Luna. So a rocket that took off from Earth with ten drums of fuel could stop at a fuel-base on the Moon and soar away again with two hundred, and sometimes more.

With the Moon as a fueling-base men could conquer the Solar System. Without the Moon Mankind was Earthbound. Men had to have the Moon!

But Butch's relatives prevented it. By normal experience there could not

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be life on an airless desert with such monstrous extremes of heat and cold as the Moon's surface experienced. But there was life there. Butch's kinfolk did not breathe oxygen. Apparently they ate it in some mineral combination and it interacted with other minerals in their bodies to yield heat and energy.

Men thought squids peculiar because their blood stream used copper in the place of iron but Butch and his kindred seemed to have complex carbon compounds in place of both. They were intelligent in some fashion, it was clear. They used tools, they chipped stone and they had long, needlelike stone crystals which they threw as weapons.

No metals, of course, for lack of fire to smelt them. There couldn't be fire without air. But Worden reflected that in ancient days some experimenters had melted metals and set wood ablaze with mirrors concentrating the heat of the sun. With the naked sunlight of the Moon's surface, not tempered by air and clouds, Butch's folk could have metals if they only contrived mirrors and curved them properly like the mirrors of telescopes on Earth.

WORDEN had an odd sensation just then. He looked around sharply as if somebody had made a sudden movement. But the video screen merely displayed a comedian back on Earth, wearing a funny hat. Everybody watched the screen.

As Worden glanced the comedian was smothered in a mass of soapsuds and the studio audience two hundred thirty thousand miles away squealed and applauded the exquisite humor of the scene. In the Moon-station in Tycho crater somehow it was less than comical.

Worden got up and shook himself. He went to look again at the screens that showed the interior of the nursery. Butch was motionless on the absurd cone-shaped stone. His eyes were closed. He was simply a furry pathetic little bundle, stolen from the airless wastes outside to be bred into a traitor to his race.

Worden went to his cabin and turned in. Before he slept though he reflected that there was still some hope for Butch. Nobody understood his metabolism. Nobody could guess at what he ate. Butch might starve to death. If he did he would be lucky. But it was Worden's job to prevent it.

Butch's relatives were at war with men. The tractors that crawled away from the station—they went amazingly fast on the Moon—were watched by big-eyed furry creatures from rock-crevices and from behind the boulders that dotted the Lunar landscape.

Needle-sharp throwing-stones flicked through emptiness. They splintered on the tractor-bodies and on the tractor-ports but sometimes they jammed or broke a tread and then the tractor had to stop. Somebody had to go out and clear things or make repairs. And then a storm of throwing-stones poured upon him.

A needle-pointed stone, traveling a hundred feet a second, hit just as hard on Luna as it did on Earth—and it traveled farther. Space-suits were punctured. Men died. Now tractor-treads were being armored and special repair-suits were under construction, made of hardened steel plates.

Men who reached the Moon in rocket-ships were having to wear armor like medieval knights and men-at-arms! There was a war on. A traitor was needed. And Butch was elected to be that traitor.

When Worden went into the nursery again—the days and nights on the Moon are two weeks long apiece, so men ignored such matters inside the station—Butch leaped for the dunce-cap stone and clung to its top. He had been fumbling around the rocking-stone. It still swayed back and forth on its plate. Now he seemed to try to squeeze himself to unity with the stone spire, his eyes

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staring enigmatically at Worden.

"I don't know whether we'll get anywhere or not," said Worden conversationally. "Maybe you'll put up a fight if I touch you. But we'll see."

He reached out his hand. The small furry body—neither hot nor cold but the temperature of the air in the station—resisted desperately. But Butch was very young. Worden peeled him loose and carried him across the room to the human schoolroom equipment. Butch curled up, staring fearfully.

"I'm playing dirty," said Worden, "by being nice to you, Butch. Here's a toy."

Butch stirred in his grasp. His eyes blinked rapidly. Worden put him down and wound up a tiny mechanical toy. It moved. Butch watched intently. When it stopped he looked back at Worden. Worden wound it up again. Again Butch watched. When it ran down a second time the tiny handlike paw reached out.

With an odd tentativeness, Butch tried to turn the winding-key. He was not strong enough. After an instant he went loping across to the dwelling-cave. The winding-key was a metal ring. Butch fitted that over a throw-stone point, and twisted the toy about. He wound it up. He put the toy on the floor and watched it work. Worden's jaw dropped.

"Brains!" he said wryly. "Too bad, Butch! You know the principle of the lever. At a guess you've an eight-year-old human brain! I'm sorry for you, fella!"

At the regular communication-hour he made his report to Earth. Butch was teachable. He only had to see a thing done once—or at most twice—to be able to repeat the motions involved.

"And," said Worden, carefully detached, "he isn't afraid of me now. He understands that I intend to be friendly. While I was carrying him I talked to him. He felt the vibration of my chest from my voice.

"Just before I left him I picked him up and talked to him again. He looked at my mouth as it moved and put his paw on my chest to feel the vibrations. I put his paw at my throat. The vibrations are clearer there. He seemed fascinated. I don't know how you'd rate his intelligence but it's above that of a human baby."

Then he said with even greater detachment, "I am disturbed. If you must know I don't like the idea of exterminating his kind. They have tools—they have intelligence. I think we should try to communicate with them in some way—try to make friends—stop killing them for dissection."

THE communicator was silent as his voice traveled a second and a half to Earth and for the answer to come a second and a half back. Then the recording clerk's voice said briskly, "Very good, Mr. Worden! Your voice was very clear!"

Worden shrugged his shoulders. The Lunar Station in Tycho was a highly official enterprise. The staff on the Moon had to be competent—and besides political appointees did not want to risk their precious lives—but the Earth end of the business of the Space-Exploration Bureau was run by the sort of people who do get on official payrolls. Worden felt sorry for Butch—and for Butch's relatives.

In a later lesson-session Worden took an empty coffee-tin into the nursery. He showed Butch that its bottom vibrated when he spoke into it, just as his throat did. Butch experimented busily. He discovered for himself that it had to be pointed at Worden to catch the vibrations.

Worden was unhappy. He would have preferred Butch to be a little less rational. But for the next lesson he presented Butch with a really thin metal diaphragm stretched across a hoop. Butch caught the idea at once.

When Worden made his next report to Earth he felt angry.

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"Butch has no experience of sound as we have of course," he said curtly. "There's no air on the Moon. But sound travels through rocks. He's sensitive to vibrations in solid objects just as a deaf person can feel the vibration of a dance-floor if the music is loud enough.

"Maybe Butch's kind has a language or a code of sounds sent through the rock underfoot. They do communicate somehow! And if they've brains and a means of communication they aren't animals and shouldn't be exterminated for our convenience!"

He stopped. The Chief Biologist of the Space-Exploration Bureau was at the other end of the communication-beam then. After the necessary pause for distance his voice came blandly.

"Splendid, Worden! Splendid reasoning! But we have to take the longer view. Exploration of Mars and Venus is a very popular idea with the public. If we are to have funds—and the appropriations come up for a vote shortly—we have to make progress toward the nearer planets. The public demands it. Unless we can begin work on a refueling-base on the Moon public interest will cease!"

Worden said urgently, "Suppose I send some pictures of Butch? He's very human, sir! He's extraordinarily appealing! He has personality! A reel or two of Butch at his lessons ought to be popular!"

Again that irritating wait while his voice traveled a quarter-million miles at the speed of light and the wait for the reply.

"The—ah—Lunar creatures, Worden," said the Chief Biologist regretfully, "have killed a number of men who have been publicized as martyrs to science. We cannot give favorable publicity to creatures that have killed men!" Then he added blandly, "But you are progressing splendidly, Worden—*Splendidly!* Carry on!"

His image faded from the video screen. Worden said naughty words as he turned away. He'd come to like Butch. Butch trusted him. Butch now slid down from that crazy perch of his and came rushing to his arms every time he entered the nursery.

Butch was ridiculously small—no more than eighteen inches high. He was preposterously light and fragile in his nursery, where only Moon-gravity obtained. And Butch was such an earnest little creature, so soberly absorbed in everything that Worden showed him!

He was still fascinated by the phenomena of sound. Humming or singing—even Worden's humming and singing—entranced him. When Worden's lips moved now Butch struck an attitude and held up the hoop-diaphragm with a tiny finger pressed to it to catch the vibrations Worden's voice made.

Now too when he grasped an idea Worden tried to convey he tended to swagger. He became more human in his actions with every session of human contact. Once indeed Worden looked at the video-screens which spied on Butch and saw him—all alone—solemnly going through every gesture and every movement Worden had made. He was pretending to give a lesson to an imaginary still-tinier companion. He was pretending to be Worden, apparently for his own satisfaction!

Worden felt a lump in his throat. He was enormously fond of the little mite. It was painful that he had just left Butch to help in the construction of a vibrator-microphone device which would transfer his voice to rock-vibrations and simultaneously pick up any other vibrations that might be made in return.

If the members of Butch's race did communicate by tapping on rocks or the like men could eavesdrop on them—could locate them, could detect ambushes in preparation and apply mankind's deadly military counter-measures.

Worden hoped the gadget wouldn't work. But it did. When he put it on the floor of the nursery and spoke into the microphone, Butch did feel the vibra-

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tions underfoot. He recognized their identity with the vibrations he'd learned to detect in air.

He made a skipping exultant hop and jump. It was plainly the uttermost expression of satisfaction. And then his tiny foot pattered and scratched furiously on the floor. It made a peculiar scratchy tapping noise which the microphone picked up. Butch watched Worden's face, making the sounds which were like highly elaborated footfalls.

"No dice, Butch," said Worden unhappily. "I can't understand it. But it looks as if you've started your treason already. This'll help wipe out some of your folks."

HE REPORTED it reluctantly to the Head of the station. Microphones were immediately set into the rocky crater-floor outside the station and others were made ready for exploring parties to use for the detection of Moon-creatures near them. Oddly enough the microphones by the station yielded results right away.

It was near sunset. Butch had been captured near the middle of the three-hundred-and-thirty-four-hour Lunar day. In all the hours between—a week by Earth-time—he had had no nourishment of any sort. Worden had conscientiously offered him every edible and inedible substance in the station. Then at least one sample of every mineral in the station collection.

Butch regarded them all with interest but without appetite. Worden—liking Butch—expected him to die of starvation and thought it a good idea. Better than encompassing the death of all his race anyhow. And it did seem to him that Butch was beginning to show a certain sluggishness, a certain lack of bounce and energy. He thought it was weakness from hunger.

Sunset progressed. Yard by yard, fathom by fathom, half-mile by half-mile, the shadows of the miles-high western walls of Tycho crept across the crater floor. There came a time when only the central hump had sunlight. Then the shadow began to creep up the eastern walls. Presently the last thin jagged line of light would vanish and the colossal cup of the crater would be filled to overflowing with the night.

Worden watched the incandescent sunlight growing even narrower on the cliffs. He would see no other sunlight for two weeks Earth-time. Then abruptly an alarm-bell rang. It clanged stridently, furiously. Doors hissed shut, dividing the Station into airtight sections.

Loudspeakers snapped, *"Noises in the rock outside! Sounds like moon-creatures talking nearby! They may plan an attack! Everybody into space-suits and get guns ready!"*

At just that instant the last thin sliver of sunshine disappeared. Worden thought instantly of Butch. There was no space-suit to fit him. Then he grimaced a little. Butch didn't need a space-suit.

Worden got into the clumsy outfit. The lights dimmed. The harsh airless space outside the station was suddenly bathed in light. The multimillion-lumen beam, made to guide rocketships to a landing even at night, was turned on to expose any creatures with designs on its owners. It was startling to see how little space was really lighted by the beam and how much of stark blackness spread on beyond.

The loudspeaker snapped again, *"Two moon-creatures! Running away! They're zigzagging! Anybody who wants to take a shot—"* The voice paused. It didn't matter. Nobody is a crack shot in a space-suit. *"They left something behind!"* said the voice in the loudspeaker. It was sharp and uneasy.

"I'll take a look at that," said Worden. His own voice startled him but he was depressed. "I've got a hunch what it is."

Minutes later he went out through the airlock. He moved lightly despite the cumbrous suit he wore. There were two

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other staff-members with him. All three were armed and the searchlight beam stabbed here and there erratically to expose any relative of Butch who might try to approach them in the darkness.

With the light at his back Worden could see that trillions of stars looked down upon Luna. The zenith was filled with infinitesimal specks of light of every conceivable color. The familiar constellations burned ten times as brightly as on Earth. And the Earth itself hung nearly overhead. It was three-quarters full—a monstrous bluish giant in the sky, four times the Moon's diameter, its ice-caps and continents mistily to be seen.

Worden went forebodingly to the object left behind by Butch's kin. He wasn't much surprised when he saw what it was. It was a rocking-stone on its plate with a fine impalpable dust on the plate as if something had been crushed under the egg-shaped upper stone acting as a mill.

Worden said sourly into his helmet microphone, "It's a present for Butch. His kinfolks know he was captured alive. They suspect he's hungry. They've left some grub for him of the kind he wants or needs most."

That was plainly what it was. It did not make Worden feel proud. A baby—Butch—had been kidnaped by the enemies of its race. That baby was a prisoner and its captors would have nothing with which to feed it. So someone, greatly daring—Worden wondered sombrely if it was Butch's father and mother—had risked their lives to leave food for him with a rocking-stone to tag it for recognition as food.

"It's a dirty shame," said Worden bitterly. "All right! Let's carry it back. Careful not to spill the powdered stuff!"

His lack of pride was emphasized when Butch fell to upon the unidentified powder with marked enthusiasm. Tiny pinch by tiny pinch Butch consumed it with an air of vast satisfaction. Worden felt ashamed.

"You're getting treated pretty rough, Butch," said Worden. "What I've already learned from you will cost a good many hundred of your folks' lives. And they're taking chances to feed you! I'm making you a traitor and myself a scoundrel."

BUTCH thoughtfully held up the hoop-diaphragm to catch the voice vibrations in the air. He was small and furry and absorbed. He decided that he could pick up sounds better from the rock underfoot. He pressed the communicator-microphone on Worden. He waited.

"No!" said Worden roughly. "Your people are too human. Don't let me find out any more, Butch. Be smart and play dumb!"

But Butch didn't. It wasn't very long before Worden was teaching him to read. Oddly, though, the rock microphones that had given the alarm at the station didn't help the tractor-parties at all. Butch's kinfolk seemed to vanish from the neighborhood of the station altogether. Of course if that kept up the construction of a fuel-base could be begun and the actual extermination of the species carried out later. But the reports on Butch were suggesting other possibilities.

"If your folks stay vanished," Worden told Butch, "it'll be all right for awhile—and only for awhile. I'm being urged to try to get you used to Earth-gravity. If I succeed they'll want you on Earth in a zoo. And if that works—why—they'll be sending other expeditions to get more of your kinfolks to put in other zoos."

Butch watched Worden, motionless.

"And also"—Worden's tone was very grim—"there's some miniature mining-machinery coming up by the next rocket. I'm supposed to see if you can learn to run it."

Butch made scratching sounds on the floor. It was unintelligible of course but it was an expression of interest at least.

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Butch seemed to enjoy the vibrations of Worden's voice, just as a dog likes to have his master talk to him. Worden grunted.

"We humans class you as an animal, Butch. We tell ourselves that all the animal world should be subject to us. Animals should work for us. If you act too smart we'll hunt down all your relatives and set them to work digging minerals for us. You'll be with them. But I don't want you to work your heart out in a mine, Butch! It's wrong!"

Butch remained quite still. Worden thought sickishly of small furry creatures like Butch driven to labor in airless mines in the Moon's frigid depths. With guards in space-suits watching lest any try to escape to the freedom they'd known before the coming of men. With guns mounted against revolt. With punishments for rebellion or weariness.

It wouldn't be unprecedented. The Indians in Cuba when the Spanish came—Negro slavery in both Americas—concentration-camps . . .

Butch moved. He put a small furry paw on Worden's knee. Worden scowled at him.

"Bad business," he said harshly. "I'd rather not get fond of you. You're a likeable little cuss but your race is doomed. The trouble is that you didn't bother to develop a civilization. And if you had, I suspect we'd have smashed it. We humans aren't what you'd call admirable."

Butch went over to the blackboard. He took a piece of pastel-chalk—ordinary chalk was too hard for his Moon-gravity muscles to use—and soberly began to make marks on the slate. The marks formed letters. The letters made words. The words made sense.

YOU, wrote Butch quite incredibly in neat pica lettering, GOOD FRIEND.

He turned his head to stare at Worden. Worden went white. "I haven't taught you those words, Butch!" he said very quietly. "What's up?"

He'd forgotten that his words, to Butch, were merely vibrations in the air or in the floor. He'd forgotten they had no meaning. But Butch seemed to have forgotten it too. He marked soberly:

MY FRIEND GET SPACE SUIT. He looked at Worden and marked once more. TAKE ME OUT. I COME BACK WITH YOU.

He looked at Worden with large incongruously soft and appealing eyes. And Worden's brain seemed to spin inside his skull. After a long time Butch printed again—YES.

Then Worden sat very still indeed. There was only Moon-gravity in the nursery and he weighed only one-eighth as much as on Earth. But he felt very weak. Then he felt grim.

"Not much else to do, I suppose," he said slowly. "But I'll have to carry you through Earth-gravity to the airlock."

He got to his feet. Butch made a little leap up into his arms. He curled up there, staring at Worden's face. Just before Worden stepped through the door Butch reached up a skinny paw and caressed Worden's cheek tentatively.

"Here we go!" said Worden. "The idea was for you to be a traitor. I wonder—"

But with Butch a furry ball, suffering in the multiplied weight Earth-gravity imposed upon him, Worden made his way to the airlock. He donned a space-suit. He went out.

It was near sunrise then. A long time had passed and Earth was now in its last quarter and the very highest peak of all that made up the crater-wall glowed incandescent in the sunshine. But the stars were still quite visible and very bright. Worden walked away from the station, guided by the Earth-shine on the ground underfoot.

Three hours later he came back. Butch skipped and hopped beside his space-suited figure. Behind them came two other figures. They were smaller than Worden but much larger than Butch. They were skinny and furry and they carried

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a burden. A mile from the station he switched on his suit-radio. He called. A startled voice answered in his earphones.

"It's Worden," he said drily. "I've been out for a walk with Butch. We visited his family and I've a couple of his cousins with me. They want to pay a visit and present some gifts. Will you let us in without shooting?"

THERE were exclamations. There was confusion. But Worden went on steadily toward the station while another high peak glowed in sunrise light and a third seemed to burst into incandescence and dawn was definitely on the way.

The airlock door opened. The party from the airless Moon went in. When the airlock filled, though, and the gravity-coils went on, Butch and his relatives became helpless. They had to be carried to the nursery. There they uncurled themselves and blinked enigmatically at the men who crowded into the room where gravity was normal for the Moon and at the other men who stared in the door.

"I've got a sort of message," said Worden. "Butch and his relatives want to make a deal with us. You'll notice that they've put themselves at our mercy. We can kill all three of them. But they want to make a deal."

The Head of the station said uncomfortably, "You've managed two-way communication, Worden?"

"*I* haven't," Worden told him. "*They* have. They've proved to me that they've brains equal to ours. They've been treated as animals and shot as specimens. They've fought back—naturally! But they want to make friends. They say that we can never use the Moon except in space-suits and in stations like this and they could never take Earth's gravity. So there's no need for us to be enemies. We can help each other."

The Head of the station said drily, "Plausible enough but we have to act under orders, Worden. Did you explain that?"

"They know," said Worden. "So they've got set to defend themselves if necessary. They've set up smelters to handle metals. They get the heat by sun-mirrors, concentrating sunlight. They've even begun to work with gases held in containers. They're not far along with electronics yet but they've got the theoretic knowledge and they don't need vacuum tubes. They live in a vacuum. They can defend themselves from now on."

The Head said mildly, "I've watched Butch, you know, Worden. And you don't look crazy. But if this sort of thing is sprung on the armed forces on Earth there'll be trouble. They've been arguing for armed rocket-ships. If your friends start a real war for defense—if they can—maybe rocket warships will be the answer."

Worden nodded.

"Right. But our rockets aren't so good that they can fight this far from a fuel-store and there couldn't be one on the Moon with all of Butch's kinfolk civilized—as they nearly are now—and as they certainly will be within the next few weeks. Smart people, these cousins and such of Butch!"

"I'm afraid they'll have to prove it," said the Head. "Where'd they get this sudden surge in culture?"

"From us," said Worden. "Smelting from me, I think. Metallurgy and mechanical engineering from the tractor-mechanics. Geology—call it Lunology here—mostly from you."

"How's that?" demanded the Head.

"Think of something you'd like Butch to do," said Worden grimly, "and then watch him."

The Head stared and then looked at Butch. Butch—small and furry and swaggering—stood up and bowed profoundly from the waist. One paw was placed where his heart could be. The other made a grandiose sweeping gesture. He straightened up and strutted, then climbed swiftly into Worden's lap and put a skinny furry arm about his neck.

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"That bow," said the Head, very pale, "is what I had in mind. You mean—"

"Just so," said Worden. "Butch's ancestors had no air to make noises in for speech. So they developed telepathy. In time, be sure, they worked out something like music—sounds carried through rock. But like our music it doesn't carry meaning. They communicate directly from mind to mind. Only we can't pick up communications from them and they can from us."

"They read our minds!" said the Head. He licked his lips. "And when we first shot them for specimens they were trying to communicate. Now they fight."

"Naturally," said Worden. "Wouldn't we? They've been picking our brains. They can put up a terrific battle now. They could wipe out this station without trouble. They let us stay so they could learn from us. Now they want to trade."

"We have to report to Earth," said the Head slowly, "but—"

"They brought along some samples," said Worden. "They'll swap diamonds, weight for weight, for records. They like our music. They'll trade emeralds for textbooks—they can read, now! And they'll set up an atomic pile and swap plutonium for other things they'll think of later. Trading on that basis should be cheaper than a war!"

"Yes," said the Head. "It should. That's the sort of argument men will listen to. But how—"

"Butch," said Worden ironically. "Just Butch! We didn't capture him—they planted him on us! He stayed in the station and picked our brains and relayed the stuff to his relatives. We wanted to learn about them, remember? It's like the story of the psychologist . . ."

* * * * *

There's a story about a psychologist who was studying the intelligence of a chimpanzee. He led the chimp into a room full of toys, went out, closed the door and put his eye to the keyhole to see what the chimp was doing. He found himself gazing into a glittering interested brown eye only inches from his own. The chimp was looking through the keyhole to see what the psychologist was doing.

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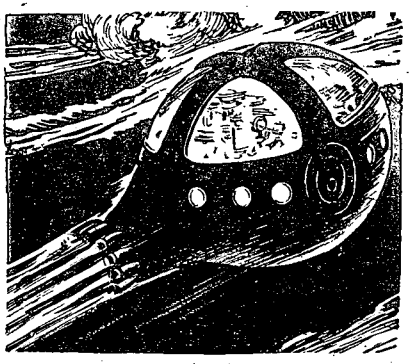

IN

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THE READER SPEAKS

(Continued from page 6)

mobiles. Little fragments of memories will always be with me—the smell of hot oil and metal on a frosty late-summer morning, the muted rumble of men's voices as the morning mist streamed off the mountains and the sun began to come through, the tang of raw gasoline tumbling into the tank—trips and memories and always a car somewhere in the scene.

In the same way an older generation ties its memories to horses and saddles. In the same way our children today are beginning to tie their early associations to the airplane. And already creeping into the scene are models of rockets and the first rising murmurs of space and weird names like Mars and Saturn and the shivery concept of not just looking up at the moon on a summer evening, but of flashing through the darkness and cold straight up towards it.

Another generation and space talk will crowd out the airplane as the motor car pushed out the horse. And with it will change the thought habits and the play habits of children.

It has always struck me as being something of a waste to cling tearfully to a sentimental attachment of the past, no matter how much your emotions compel you to do so. It presumes the egotistical assumption that your memory is somehow superior to anything which might follow. Those who regretted the passing of the horse and fought the spread of the automobile were assuming that the kind of associations they had were better than the associations to come of those who would know nothing about horses.

Actually it is only your own memories which are important, and your own associations, whatever they may be. Therefore, change as such is a negligible factor. To children yet in the misty future, the memory of a stuttering rocket will be as rich in nostalgia as the creak of saddle leather and the horse smell to the children who saw the beginning of the 20th century. We are fairly neutral on the subject of horses. But for our money, how much richer will a child's beginnings be with a whole universe to play in!

LETTERS FROM OUR READERS

THE mail has been somewhat mixed, in this hectic period, half of it being still addressed to Merwin and half to Mines, with a couple of frantic postcards demanding, "Is it true?" Anyway, whatever the aim, they're still hitting old TWS.

A G-R-R-R LETTER
by Bob Farnham

Dear Sir: I have just received the August TWS—(the JUNE issue must have gotten lost in the mails—) and as usual, turned first to The Reader Speaks. When I came upon that egotistic thing by Private Jackadoon Moir, I went into a slow burn, and finally burst out into flame with this letter. Silly, conceited, and stupid pinheads are we? Well! Well! THAT is NEWS! Pvt. M has a lot of that in his own make up, else he would not have written in the first place and he gives himself away by writing it. People who live in glass houses, etc., etc.

If these egotistical Super-intellectuals dislike so much reading the letters of fans, whyinell do they read them? To use TRS as an outlet for their mentally twisted venom to satisfy their own conceited assininity clearly demonstrates that they are just as guilty of the same thing they hold up to such vitriolic ridicule as the fault of so many "inferior mentalities."

Cutting down the reader's letter-pages was a dirty trick. Cutting the number of pages was another dirty trick, but the quality of the stories offset both, so I'm not complaining about that but I am uttering a long, loud and as insulting-as-humanly-possible BRACKKK-KKKK to those empty-headed, lame-brained (if **any** brains!) moronic idiots that are so mentally (?) superior to everyone else. We can get along without those snobs. It was my experience that a mere six months in military service took the superior self-opiniated snobs and straightened them out in a hurry. Those that a hitch in the army didn't cure sure had a tough time of it. I feel sorry for Pvt. Moir. . he don't realize it perhaps, but he's in for a lot of rows and tough hoeing. We had a member like that guy Moir in THE CENTAURIANS. When he showed his true colors, he was bounced so hard and so fast that when his letter telling him so hit the mail box, the mail box wabbled so hard that the bolts broke and the box fell off the post.

The goofiest fan in Fandom has more sense in his little finger-nail than Private (Swell Head) Moir has in his whole conceited carcass. The Reader Speaks and Fandom as well, can certainly do very nicely . . . without snobs, and in nearly 6 years as an active fan, I've found that snobs don't last very long. LEMONS to Pvt. Moir. —104 Mountain View Drive, Dalton, Georgia.

P.S. If any Dalton Fans read this—write to me. . . .

What we like about our fans is the calm, quiet, dispassionate scientific approach. . . .

FAINT PRAISE AND NO FAIR LADY
by Sheldon Deretchin

Dear Mr. Merwin: I take pen in hand to write you a letter long due, a letter of commendation. I do not mean that this letter is due you because of past issues however, this letter is on behalf of the June issue. For the first time in a long collection I have found an issue

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for which I have no complaint. The lead novel is one of the best you have had in a long time, the art work is superb, even the short stories are good.

In this letter I also will air my complaint against your previous issues. (1) the covers were not only disgusting but repetitious in context. A glaring example of the last statement can be shown in the March and May issues. The covers are identical except for minor details, such as the physical characteristics and dress of the fems, the position of the planets, etc., ad nauseum. (2) The stories were not only puerile and silly but displayed an amazing disconcept of humanity. (3) The inside art work, to put it mildly, stank.

These are only the main dislikes that I had. However, there are several more I could have put in at the risk of being malicious. (Who, you? Never! —Ed.).

The June issue, however, refuted all the above complaints. Please keep all your future issues up to the same high standard.

I have a request to make of the fen department. I am the general factotum of a stf club called The Variants and would like to ask all the fen in Brooklyn who live in Flatbush to join, or at least to inquire about the club. I would greatly appreciate it if you would put a notice or something to that effect in the fen column, or to print my request in the letter section.—1234 Utica Ave., Brooklyn 3, N.Y.

Variants from what? Humanity? And you think we'd print your letter after all those insults? Not us, kid.

EXPLANATION DEPT.

by Henry W. Burwell

Dear Mr. Merwin: Thanks very much for the explanation of the delay in the printing of letters in TRS. A three month deadline for the printers still seems abnormally long, though. Is this more or less standard in the pulp field?

Getting down to business on the August issue:

1. Alarm Reaction
2. Earthlight
3. The Dome

The Jones novelet was a tightly written, very workmanlike job, and thoroughly enjoyable. Many writers would have ended the story with next to last paragraph, instead of the more human last paragraph which Jones used.

"Earthlight" was reminiscent of Doc Smith in the battle scenes between the moon fort and the Phlegethon. I enjoy Mr. Clarke's work, especially his longer stories, and the only slight criticism I would make of this one is that the ending could have been a little stronger.

"The Dome," by Fredric Brown, was the only good short in the issue. Your short stories have been below par lately, as others have so kindly pointed out. Larry Clinton was a very good orchestra leader, but if "NO DIPSY FOR DIX" was one of his better pieces. I suggest he stick to sheet music. Ugh. James Blish article was quite good.

One question and I go. Is it true that you are leaving Standard to free-lance?—459 Sterling St. N.E., Atlanta, Ga.

P.S. Is Pinhead Jackadoon Moir to outvote all the other 19,999 fans? (Figures from **Life**) TRS to be 50% shorter in future issues?

It's not the printers who require three months, it is the vast detail of getting together so many hundreds of tidbits and seeing them through all the stages of editing, illustrating, typesetting, proof-reading, then printing and distribution, which uses up the three months. So far as we know, it's standard not only at Standard.

Is Merwin left? Where've you been?

AND ANOTHER

by Bob Hoskins

Ye Edde: Information has reached me that one Sam Merwin, Jr., a gentleman who has been keeping the editorial seat of the science fiction magazine of Better Pubs warm for lo, these seven years, has quit his position as exalted header of editorial tactics of said s-f mags. I do not know whether or not this is so, but if it should be true, I feel that a rousing farewell cheer should be sent the way of Mr. Merwin, who has raised the quality of the formerly mentioned zines to their present high status amongst the multitudinous competitors now exisiting in the field. And if it is true, I would like to wish his successor much luck. You'll need it, in this job!

The fiction this issue is all quite good, although the lack of any really long stories is lamentable. The shorts were all good, although I wouldn't call any true classics. For that matter, no story is really memorable. They are just what they are actually meant to be—a pleasant evening's entertainment. Arthur C. Clarke was the best this time round, although he does much better on his stories of the far future. Please have him do an immediate sequel to his excellent "Against the Fall of Night," from the Nov. '48 SS. Such a story is seen only once in an editors lifetime, but can be saved to be savored over and over again by the fortunate reader.

What happened to the book review department in this issue? Publishers stopped sending around free copies of their books? There is no shortage of new material, Chu knows.

I recently picked up about eight issues of TWS from '45 thru 47, including the one containing Fred Brown's "Pi in the Sky," Wilm Carver's "You'll See A Pink House," and Murray Leinster's "Proxima Centauri." How come you no longer use stuff like that? Have most issues from Dec., '46 to date, and I don't think your shorts have had such classics since the middle of 1948.

How about an advance line-up of probable material in SS and TWS for the next year? You have already given several previews of FSM.

I would like to say right here and now that most of the stories of the supposedly "Father of Science Fiction," Stanley G. Weinbaum, smell to high heaven! I have read his "The Black Flame." I have read many of his other stories. I wish I hadn't. 'Nuff said. Have enough fen mad at me as it is. But for a parting insult, tho, before it slips my mind, I would like to say that I much prefer the stories of Howard Phillips Lovecraft to those of Stanley Grauman Weinbaum! 'Bye now.—Lyons Falls, N.Y.

Sammy appreciates all the kind things said about him to his back, really he does. He's told me so. Being still in New York, he pops in every once in a while and still gets a kick out

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of the letters, some still flailing madly about in thin air. And you'll be seeing his work from time to time, for he is supposed to be buckling down to the Sirius business of free-lancing.

As to this business of our not printing classics as we did in the old days, faugh and a murrain upon it. I think our average today is so much higher than it was ten years ago that there is no comparison. Of course you will, in any period, be able to pull out a couple of stories that are simply in a class by themselves, but these are not to be considered as typical of the period by any means.

Sure and is it a look into the future you want? There's a novel by Jack Vance coming up, ABERCROMBIE STATION, about a wonderful satellite for fat people only; there's a sequel to THE MERAKIAN MIRACLE by Ken Crossen called the REGAL RIGELIAN, there's a novelet that will chill what blood you've got by John Wyndham named SURVIVAL (make a note of it), there's another Vance and a dilly, titled CHOLWELL'S CHICKENS, there's a new Fletcher Pratt—an interesting little future detective story called DOUBLE JEOPARDY—there's a George O. Smith novelet named PLUMBERS' FRIEND and a thing of sheer beauty by Joel Townsley Rogers called MOMENT WITHOUT TIME, a Murray Leinster dubbed THE MIDDLE OF THE WEEK AFTER NEXT, guaranteed for some laughs, and still further ahead another Leinster with the improbable title of THE GADGET HAD A GHOST. And in STARTLING—well, why torture you?

I'll only say that we've got a full-length novel coming up by Margaret St. Clair called VULCAN'S DOLLS. And after reading that, if you still want to argue about the old-time classics, why just come around. We'll be here.

PURE ENJOYMENT

by Emory H. Mann

Dear Mr. Merwin: Have just finished reading the August issue of Thrilling Wonder Stories and after a review of the April issue mentioned in "The Reader Speaks," I now have a fair idea what all the arguments are about.

I liked the Aug. issue very much. I think I got more kick out of "No Dipsy for Dix," than any other-perhaps the sheer novelty of the idea, as well as vicarious enjoyment at the results.

Anent your comment regarding "Alarm Reaction," I think you've got something there. My favorite subject is the human race, dealing mostly with its relations among themselves. This mostly embodies what they think, why they think it, beliefs, superstitions, etc. In the light of this and of my philosophical beliefs; I don't believe that man will conquer space until he has conquered earth. This includes an understanding of man himself and what makes him tick. That seems a large order, but it seems to me that if that weren't so, the sacrifice Jesus of Nazareth made was in vain. If man does succeed in a limited degree of space travel, I hope that none of our planets in this system is inhabited by life that man can plunder.

Perhaps the story "Ultimate Purpose," expresses best the methods of man's advancement. I think that we shall see a reenactment of this in the next century. As I see it we are arriving at a similar circumstance as in the story, only in lesser degree, due to our lower stage of development. Here we are developing A and H bombs of various kinds, plus a lot of mechanical gadgets that are making it less necessary for us to use our minds and bodies. At the same time, as you pointed out, our basic natures have not changed to a degree sufficient to warrant our using them in a sensible and rational manner for the best good of all mankind. Granted that it takes national emergencies to spur us to make the effort to use our brains and other potentials, the real trouble is that we stop using them during peacetime, when the greatest opportunities for advancement are available. So we will wind up behind the eight-ball again until we learn-as learn we must-to make the most of our own personal potentials. This entails the development of man's mind—the power of man's mind, which is infinite, and the control of the emotions and appetites, which we have inherited from our animal ancestors of the ancient past. So again we wind up with chaos and have to start all over again, but man being the creature that he is seems to be able to learn no other way.

To me this isn't as pessimistic as it sounds as I believe in the ancient philosophy of reincarnation, which was taught in prehistoric times in the Hermetic philosophy and restated a few years ago by the readings of Edgar Cayce.

I liked your editorial very much. The only point I disagree with you is in the last half of the first of your four rules for good fiction. I disagree in this respect: I think that it isn't necessary that the creatures of another world should necessarily think and do things in a, to us, logical manner, rather I think, it would be more interesting, if their way of thinking was sufficiently different that it would challenge man's way of thinking and his concept of common sense. Other than that, I do agree with you.

Basically, I read science-fiction for the pure enjoyment of it, rather than to criticize or to take it apart. If I like it, I like it, and that's all there is to it. I am still adolescent enough (at 37) to like to have the stories wind up with love and kisses, rather than with the death of all the characters, or the destruction of the world. It seems as though science-fiction is getting to be a more and more pessimistic form of story, especially in your leading competitors. Perhaps they don't realize it any more than you seem to have realized that there has been a predominance of letters con Bradbury, as one of the fan letters indicated.

Anent the pictures, illustrations or whatever you call them, I fell in love with Bergey's cover girl this issue, but what does she breathe? All the boys seem to be playing it safe with oxygen from their helmets! I rather had to laugh when I read Marion Bradley's letter about the demand for Finlay in place of Bergey. I'm forced to admit she has a point there, but then I'm not against the displaying of feminine pulchritude in the illustrations, so I like them both very much. In fact I missed the usual pleasing illustrations in this issue.

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I hope that Private Moir's letter will not affect the "letters to the editor" department. I enjoy reading the letters from the fans as much as reading the stories, especially now that we have gotten away from some of the silly stuff of the past and there isn't so much long winded analysis of the stories as there used to be.

Oh, yes, the last paragraph in Lewis Sherlock's letter is a dilly! I read said book, but when I had finished it, I wished I hadn't. (Nouy's **Human Destiny**). It has been a long time since I've had to work that hard to read any book. He may have some good points, but his thinking is diametrically opposed to mine so that it was a chore to read his book.—R.F.D. #1, West Townsend, Mass.

This is a nice normal letter. What's happening to TWS anyway?

PRINCIPLES, YET

by L. Sprague de Camp

Dear Editor: Re Mr. Katz's remark on p. 143 of TWS for August '51 about the statement on page 24 of TWS for April '51, in my CONTINENT MAKERS, about Krishnans being plants, I invite his attention to the fact that the statement was part of a speech made by one of the characters, and moreover a particularly lowbrow nogood sort of character who probably wouldn't know the facts and shouldn't be believed even if he did. No, Krishnans aren't plants. Last time I was there I bit one to see and she . . . But it's against my principles to give away a story I might some day be able to sell.—Box 223 Wallingford, Penn.

But anyway, how'd she taste?

LOGICAL POSITIVISM

by Poul Anderson

Dear Mr. Merwin: This will have to be briefer than my usual epistle, for which no doubt there will be many sighs of relief. I wish only to answer some of the questions raised by Mr. John W. Snell in his interesting letter (TWS, August).

Mr. Snell maintains that logical positivism is simply a methodology, not a philosophy, in proof of which he cites its lack of metaphysics. To this your good positivist will reply that metaphysics is precisely the energy-wasting meaningless noise which philosophy must get rid of if it is to progress.

Let's define terms. "Metaphysics" I shall use as an abbreviation for **transcendent metaphysics**, i.e., a system of statements which are by their own logic excluded from empirical check—and therefore, the positivist will say, from all factual content. The statement that there is a planet of solid beryllium 50 million light-years from Earth is not, by this definition, metaphysical, since it is in principle capable of direct or indirect test.

The statement is, to be sure, highly improbable, and it is likely that we never will be able in practice to test it; but we are not **logically** excluded from doing so. The test does not, of course, have to be direct, indeed all scientific generalizations and theories can only be tested indirectly or inductively. For instance, the world-structure described by relativity is known only indirectly, through its effects such as the motion of Mercury, atomic energy, etc. The point is that any factually meaningful (though possibly false) statement can be confirmed or disconfirmed in principle by relevant experiments.

Pure logic and mathematics are, to be sure, without empirical content; but they are not metaphysical because they do not claim to make statements about reality, they are abstract symbolic structures. The sort of thing we want to get rid of is the statement which does claim to tell us something but is so hedged around with qualifications that we cannot test either it itself or any of its implications. For example, Lorenz's ether theory was metaphysical because the velocity-shrinkage of measuring rods automatically prevented any measurement of the effect of motion through the ether; Einstein saw this and scrapped the whole concept. Belief in a "vital force" which cannot be discovered or detected by empirical means, in Aristotelian entelechies, etc., are likewise metaphysical.

Or take this example: Time does not flow continuously, but every ten years the entire universe becomes absolutely static for a certain length of time, after which it resumes operations. Sounds interesting, if improbable, eh? No. Because by the statement that **everything** goes into stasis you have excluded all possibility of direct or indirect evidence for or against the hypothesis. How can you possibly tell if time has stopped when your own clocks, metabolism, planetary motion, light-motion, and every other activity is supposed to have halted in its tracks?

I needn't multiply instances. The Kantian **Ding an sich**, which I believe started this whole argument, is the main case in point. By Kant's hypothesis, we can only know phenomena—the noumena are undiscoverable. To this the empirically minded—and logical positivism is only an expression of the empiricist temper—will say: Why talk about them, then? (Of course, we feel sure that there is **something** out there responsible for our sensations. In principle we justify our belief in external reality by saying it is a highly probable—well-confirmed—hypothesis to account for our sense data. If you wish to call this reality noumenal, you may, but it won't be noumenal in the Kantian sense.

Mr. Snell's logical refutation of solipsism won't work, I'm afraid. He starts with Descartes' **Cogito, ergo sum.** But the ego is itself a construct from immediate sense-data (including memory) a highly probable hypothesis if you will. Someone has said that Descartes should have decared not "I think" but "It thinks," Thus he postulates the ego to start with, and that, being a hypothesis of factual content, takes us out of the realm of **pure** logic at once. Logic alone cannot refute solipsism; you need axioms for the logic to work on. (A voice from the cheap seats calls out that you only need a little common sense. Agreed, but we're being philosophical right now, not sensible.)

As for Mr. Snell's hypothesis on the basis of which it is possible for the destruction of one photon to wipe out the universe, that looks positivistically okay to me, though improbable in the light of **present** scientific knowledge. I don't think my first letter said anytthing about empirical possibilities; the science-fiction writer should have a free hand there, of course.

I'm a bit heterodox in my own positivism—certainly I don't think the system has a final answer to all questions. There are plenty of knotty problems even today. (Example: Is the concept of survival after death, assuming that no possible contact between the dead and the living can take place, meaningful? I rather think it is, since we can always discover its truth or falsity by the simple process of waiting till we die.) Since I haven't time or space to discuss the system adequately, I will merely refer you to the writings of such men as Schlick, Carnap, Reichenbach, Feigl, and Ayer, where you can find very thorough considerations

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of the problems that arise. The main thing, whatever the details of your personal belief, seems to me to be the abandonment of other-wordly notions with no conceivable bearing on the reality in which we must live, and concentration on the job of understanding and improving that reality.

N.B. To all possible correspondents who may wish to argue the matter by personal mail: You're welcome, but I'll be out of touch for quite a while. Vacation.

I'll wind up with heartiest congratulations to William Tenn on his delightful "The Jester."—3423 Aldrich Ave. N., Minneapolis, 12, Minn.

If you boys enjoy this kind of sparring, we'll hold your coats, but personally we've been through it and you don't get any answers. It's fun in a way though.

SLOW READER
by J. Martin Graetz

Dear Speedy, Whoa, man, you're going too fast! Being a normal, slightly mad S-F fan, I make regular pilgrimages to the corner newsstand for my favorite mags. (TWS and SS, of course.) When I stopped there the other day, I found the August issue of THRILLING glaring right at me. This was before the month of May had given up her June STARTLINGS! Take it easy on a poor fellow's leisure time. (Do I say leisure? Since when does a STFan have leisure?)

But enough haggling over publishing skeds. You have a great magazine.

Keep those covers coming! Imagine my surprise when I picked up the August TWS and found your cover girl dressed right up to her chin! One thing though. The setting is obviously on the Moon, and the men in the background are all space-suited properly. But our poor heroine is breathing in the fresh vacuum without even the aid of a fishbowl. Bergey better brush up on his Selenography.

Here's my ratings on the June and August TWS.

For June—

SON OF THE TREE—poor. Some more of Vance's space opera. Seems to me you ought to learn by experience. E.G.—THE FIVE GOLD BANDS, SS, Nov. '50 & OVERLORDS OF MAXUS, TWS, Feb. '51.

TEMPORARY KEEPER—fair. Seems to me the same thing could happen to a steamship's doctor.

I PSI—good. Something new in E. S. P.

The short stories were good as a whole. THESIS FOR BRANDERBOOK was a fine supernatural tale. Blish's new series on the Solar System is very interesting. Your thumbnail editorials in lead novels and novelets are excellent. June was a good ish except for Vance.

Here's August—

ALARM REACTION—superior. Let's have more of Jones. AR was a well-written, thought-provoking story with a new approach to the extra-galactic-visitors theme. This story is good anthology material.

EARTHLIGHT—excellent. Clarke is always a fine writer.

ULTIMATE PURPOSE—good. The story itself was well-written, but I think the Man vs Machine plot is getting a little thin, don't you?

Short Stories. All very good. THESE THINGS ARE SIRIUS is something new. THE JESTER was quite entertaining, as also was NO DIPSY FOR DIX.

All in all, August was a superb issue. Plenty of stuff for anthologists there. Keep up your swell work. (But let's have some more Kuttner-Padgett-Liddell-etc. I wish Padgett would write some more stories like THE TWONKY & THE TIME LOCKER.) So long.—842 So. 59th St., Omaha 6, Nebraska.

The Kuttners are out in California and we haven't seen much production from them for much too long. I can tell you this, though, STARTLING has a long Kuttner novel scheduled for next spring called WELL OF THE WORLDS. So we'll be seeing you. And better take one of those fast reading courses.

YOU ASKED FOR IT
by Larry Walker

Dear Ed. I would be very grateful if you could manage to squeeze this in some corner of your letter column.

I would like to buy any book, pocket book or magazine with a Bradbury yarn in it just send me the name of the story and the price. I will pay postage.—2367 Wolcott Warren Navy Housing, San Diego, Calif.

It just so happens that there are at least two Bradbury books around—MARTIAN CHRONICLES and THE ILLUSTRATED MAN. And since certain purveyors of books read these columns with an eagle eye—watch out, Larry. You'll get more Bradbury than you ever dreamed there was.

NOSTALGIA
by Bob Strickler

Dear Mr. Merwin: Having just wound up another year of school and desiring some reading matter of a little lighter nature than economic principles, I picked up a copy of your August issue and a back issue from April also. I realize that it is of little concern to anyone but myself but it seemed to me that the April issue was much better than the one for August (of course you can't have a de Camp novel every month) and even it didn't seem as good as some of the issues I seem to remember of a couple of years ago. Perhaps this is because I missed several top authors who usually make an appearance in your magazine. Where's Kuttner anyhow?. His DARK WORLD and MASK OF CIRCE still make wonderful re-reading even after the second and third time (those came out in your sister mag though, didn't they) and I definitely hope to see him in a near-future issue.

I didn't see much mention of Bradbury stories in your letter column so I presume you haven't had any of his stories recently either. I did notice that some incredibly ancient soul complained about his stories being "adolescent." Wish we had a few more writers of juvenile material just like him. In any case, I hope you soon come up with more of those odd little stories of his which always seem to fit so well into science-fiction anthologies.

I was pleased to see that brother Bergey is still up to his old tricks. Of course I'm willing to give him the benefit of a doubt and suppose that the girl without the space helmet is in some sort of a transparent globe that protects her from the conditions around her. Oh, well, that ethereal expression on her face more than makes up for the missing space helmet. That's one

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thing about Bergey women that has always fascinated me—they can be switching from one ship to another in darkest space and still be in complete comfort wearing practically nothing at all (which is quite all right with me). I've come to the point, however, where I enjoy Bergey's covers despite his fights of fancy.

I imagine your next issue will be well up to par again with the Leigh Brackett story you have scheduled. Thanks for the many hours of enjoyable reading you have given me in the past and I'm looking forward to many more in the near future. Especially if your material conforms to the bases of a good story which you set forth in your editorial.—6719 Chestnut, Kansas City, 5, Mo.

One thing we can agree upon, THE DARK WORLD and MASK OF CIRCE are among our very top favorites and represent something of a golden age in romantic science-fiction, maybe. Anyway, note our previous mention of a new Kuttner, and also of VULCAN'S DOLLS, the St. Clair plugged in our competing mag.

DEBUNKERS AND BOSHES

by Lewis Sherlock

Dear Editor: In our letter that you published in the August TWS, leaving the null sign off the A s was a great improvement. The letter was merely silly to start with, but confusing A with null-A in printing same made it absolutely stupid. More interesting that way.

Apparently your editorial in the April issue did not come in for the comment we expected. But we see you tried again to start a fight with your comments on Politicians in the editorial in the August issue. We await the results on that one.

John W. Snell's letter is one of the worst examples of saying nothing in the most profound terms we've seen for a long time. Of course, Anderson's was equally profound, but at least it had some meaning—at least it tried to separate scientific observations from the opinions of philosophers—the boys who are proficient at leaping from unfounded assumptions to impossible conclusions.

A couple of years ago we had a letter in another SF prozine in which we teed off on authors who insist on mixing religion and prophecy in SF stories, apparently just to make the story "Logical," or at least provide the basis of ending the story satisfactorily. We bring this up merely to indicate how illogical most brands of logic really are. In one of Charles Fort's books the idea is advanced that the human race is the property of somebody or something somewhere. The context was that being the property of Fort's "Something" was no more humiliating or fatalistic than being the property of the Gods of the various religions. The smart boys really descended on that. The universe could not exist without a purposeful creation. How the creator existed without a creator was not disclosed. The human race has purpose and meaning, and without God (s) would have neither. The religions provide workable ideas of morals and ethics. But the big argument was that civilization could not exist without religion.

Religion and philosophy have a lot in common, inasmuch as they are both essentially bunk. This of course excepts anything you or I believe, naturally—. Let's look at some of the pronouncements above. What we can't figure is how life can have meaning if the Christian religions and the Christian concept of God are true. God reportedly made man in His image, so maybe we can assume the mental processes of man and God are comparable. Here we have a problem. God reportedly knows everything. Anyone with total knowledge could make infallible predictions. Therefore, God knew that, with given personalities, Adam and Eve would disobey. A simple problem of temptation and ability to resist. Yet God went ahead with the experiment, and became very unhappy over a predetermined outcome. But the experiment didn't end—the idea was for "Revenge" against a race, not the "Criminals" involved. And, in that case, why did not the Deluge kill everybody and end the experiment there? Then Christ—who in the face of the foregoing had the nerve to tell His followers that God loved them. That the idea was to forgive and be considerate of everybody—probably the way God forgave Adam four thousand years earlier.

What our religious fanatics like to forget is the alleged intelligence, personality, and character of Christ. Apparenty all were unlimited. In this perspective, the recorded happenings are unbelievably out of line with the alleged motivation behind them. A little propaganda, a few miracles, an incredible choice of followers, and a death sentence that somehow seems to have been predetermined—it was foretold by Prophecy, and therefore had to come about or the allegedly divinely inspired prophecy would have been proven wrong. So it seems that the actions of Judas and the others had been predetermined, and went according to plan. So who was responsible?

So much for the past of our glorious Christian religions. But the future? If we believe the Book of the Revelation, that too has been completely planned, and will come off according to schedule, Armageddon, the end of the world, etc, etc, no matter what anybody on earth does about it. So, if we accept religion life has meaning, eh? And so we are supposed to pray to a bunch of characters that by any moral standards are far worse than we. And in the end we fry for aleph sub something years.

We wish our philosophers and (most) psychologists and preachers and so on would take a second look at what they are so loud in proclaiming to be the ideals of humanity. Then maybe forget the whole sorry business, and try to build a civilization based on people and what we know thus far about science. Of course, if we believe our Bibles, no such freedom of choice really exists.

We started out to sound off on the silliness of philosophy, and get lost in a decitation on religion. But at that, practically all philosophers take a religious twist. Being equaly invalid, probably most of the things said about religion could be applied to the idols of philosophy, insofar as the absolute standards of truth beyond comprehension and the eternal verities are concerned.

We believe it was Eddington who wrote that the universe, when we finally understand it, may turn out to be irrational. Isn't that an appalling thought? Let's look at it. Irrational to what—itself, or our opinion of what it "should" be like? Our present idea of the universe would have been irrational to, say, Newton. Perhaps Professor X will toss our present ideas into the trash can in 1967. So what? It has happened often enough before. The term "Irrational" is meaningless out of context.

So long as we know we don't know everything, and keep trying to learn more about any subject, things are at least progressing. But when it comes to the absolute truth of religions, and the knowledge beyond knowing and eternal verities of Philosophy, that is something else. If everything is known, there is no use trying to

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increase knowledge in that field. That is likely the reason why the physical sciences are so far ahead of the social sciences today—the physicists realized they didn't know everything, the others had the last word in everything period.

Professor Eric Bell once wrote that debunkers had to supply boshes to fill the vacuum. As usual, the Professor is probably right. But that is merely another instance of the quest for certainty, to quote Russell. We have often wondered what is going to be done with certainty if it is ever found. Probably nobody will ever agree on what is "Certain". As Bell also points out, nobody agrees on what can be proved and what cannot be proved, and what is sense and what is nonsense.

This letter is far too long and says far too little. It has about as much chance of being printed as we have of owning the first television station on Mars.

Well, it has been fun writing same, anyway.—P.O. Box 51, Plainview, Texas.

Let's see how many scurrilous letters you get for this. Is TWS turning into a battle page?

ANY SPARE COPIES?

by Cpl. Clarence L. Jacobs

Dear Editor: First of all, concerning this "adultness in stf" controversy that was brought up in the June TWS. Everybody that I talked to before I came to France was raving how "Adult"-stf has become. They point gleeful fingers to the different media that is presenting stf to the public. They gibber pleasantly because more and more readers are being converted to the literature. But, does all this mean "adultness" and what would even be a good definition for "adultness" as applied to science fiction? I dunno; I just like to read the stuff!

Stf is changing, tho. In the last thirty years, it has evolved from SCIENCE-fiction to science-FICTION. Oh, a few authors like Heinlein and Arthur C. Clarke manage to make a delightful blend of technology and writing, but some ghastly things are thrust upon us unsuspecting readers . . . a (unmentionable) thing like Dee's "Girl from Callisto" for example.

Don't get me wrong—I'm not saying it was a bad STORY. If it was bad, you wouldn't have purchased and printed it. As **fiction** literally everything goes. But as **science fiction** it falls in the same category as "a thousand men can build a space ship in a thousand hours; therefore, a million men can build a space ship in one hour."

A humanoid culture on Jupiter's moon? That's rather hard to take, but I'll accept it. But, and this is the clincher, landing on Terra, and stepping outside of their ship without spacesuits (". . . they squeaked like a pair of mice . . .") is just too much! Did Mr. Dee ever hear of gravity? A person (and naturally the girl from Callisto must be considered as a person) conditioned to the gravity of Callisto would have been mashed flat—if not by gravity, by simple air-pressure. Was that particular item intended as a humorous bit, Mr. Editor? It certainly was comical. . . .

Except for a few things like what was mentioned above, I like TWS. I used to plunk my quarter down every other month when I was in the United States, and be sure of a few hours entertainment—the type of entertainmnt that can only be found in imaginative literature. I **used** to, that is. I don't any more. I can't. There are no prozines available in France. Now, instead of plunking my quarter down every month, I subscribe!

There're quite a few of us in France that like to read stf. As soon as I finish with my copy, I pass it along, but it never lasts long enough for everybody to read. I'm wondering if your readers—the non-collectors, that is—could possibly send some magazines over to this side of the Atlantic. 'Twould pep up military morale no end!

Any chance for Hannes Bok to do some illos for TWS? For fantasy artwork, the man can't be beat, and you've been printing some fantasy lately.

How about more fantasy? Ever since Unknown vanished there has been a public demand for that particular type of writing. Now if you would print an Unknown-type novel. . . .

But even if you don't, TWS is worth far more than a quarter—RA 19235355, HQ 7966 EUCOM Det., Sig. Sec., Fontainebleau Det., APO 58, % Postmaster, N. Y., N. Y.

The point you make, that stf is changing from SCIENCE-fiction to science-FICTION, is well taken. It's a trend we applaud ourselves. Readers had to put up with a lot of dullness to get a science story once and too many authors think that a technological lecture is still a story. The best writers were never guilty of this kind of writing; the best writers combined all the science you could ask into a well built and well-written story. It doesn't mean that the science must take a back seat. It means only that we're dealing in *fiction* and the story requirements cannot be shoved aside for other considerations. The "classics" you remember were all great *stories*, they weren't great lectures.

And send Cpl. Jacobs some magazines if you can.

ACCOUNTING

by Alice Bullock

Dear Mr. Merwin: Just finished reading August Thrilling Wonder. Your editorial is excellent. I always read editorials in magazines you edit first. They are good because you have something to say instead of a space to fill chore. I like the feel that there was much more you could have said but you chose what you thought best fitted. From a full barrel instead of scraping the bottom.

Now for stories. Admittedly you are the better judge of materials by reason of experience. You liked all of the stories or you wouldn't have used them. You do ask for reader opinion though—so!

ALARM REACTION. I thought the basic premise a bit weak. Even with such a reaction present, without thinking or trying to accept this as unsolvable in as highly a developed civilization as depicted seems a bit stupid. People—and things—are not pure black and white.

OUR INHABITED UNIVERSE. I like a bit of this type of thing, and I like the way Blish does it.

EARTHLIGHT. A well plotted and executed extension of the same old woes in a planetary setting.

THE DOME. Excellent. I'm a Frederic Brown fan. I like the way he handles things.

NO DIPSY FOR DIX. That light touch of humor that is all too rare in science fiction fields.

ULTIMATE PURPOSE. Carrying a present day trend

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to an ultimate conclusion. Good.

THESE THINGS ARE SIRIUS. Title inspired. Better than the story. I would have preferred a solution that was more than gadgetry—now wouldn't you?

Editorial boxes, comments on authors, themes, etc. rate a big gold star. They induce a feeling that this magazine is concerned with reader enjoyment. Thank you, Sam Merwin. I believe you are doing for the three Thrilling magazines you edit (perhaps more, but three that I read) what has always been for me important. Giving them an editorial personality. Keep it up please.—812 Gildersleeve, Santa Fe, N.M.

Gee, you're going to be disappointed when someone tells you Merwin has pft-t-t. Would it help any if we bought some of his stories and printed them in the mags?

THIS IS PRACTICAL
by J. Lever

Dear Ed: This note may sound a bit strange when you really get into it. But after reading your excellent (plug) stories, I just had to write. So here goes: How many of your readers, or authors, for that matter, believe that any of the scientific gadgets they read and write about have any basis in fact? All this ballyhoo about ray guns, meson blasters etc., must make the average scientist scream with envy.

I challenge any of your readers to come up with a working circuit for a time-machine. That last, by the way, is my main reason for writing. I guess I'm just as interested in stf as anyone else. So how about it? Can any of the readers build a time machine? Let's hear from you fellows! Even sound ideas or theories on which to work would be welcome.—36 Elderwood Drive, Toronto, Ont. Canada.

Maybe somebody's leg is being pulled, but this is the way the letter read and that's the way we printed it. If any of you characters have been hiding out a time machine on us, you ought to be ashamed of yourselves.

SEVEN DELICIOUS COLORS
by John Davis

Dear Ed: It isn't that I dislike Mr. Bergey, or that I think he has a fixation on a certain type of shemale, but on looking back through about 66 ishes of TWS and SS and FSM and such like I find that the colors of the shemales hair runs like this:

	Gray hair	1
	No hair showing	1
	Blue hair	2
Blonde	True	1
	Dishwater	1
	Peroxide	1
	Black hair	8
	Brown hair	11
	Red hair	40

Maybe his wife's a redhead?

By the way, L'Ecole's "Big O" is titled ORGASM. "The Big O" is just their affectionate way of referring to it. (Personal to Sammy Merwin: What's this rumor about you resigning?)—931 East Navajo Road, Tucson, Arizona.

And maybe the red means danger. Or maybe the color just went well with her space suit. Artists have an eye for these things and if Bergey is partial to redheads it might be well for you to investigate and see if you can find out why. As to Merwin, that's no rumor, sad to say.

HELLO AGAIN
by Harold Levine

Dear Mr. Merwin, This letter was almost a goodbye. Not that you ever knew I existed of course, but I almost stopped reading your magazine. The quality seemed to have dropped tremendously from 1948-9. In your last issue, however, you admitted that the quality had fallen, but promised better things to come. The September issue kept that promise somewhat. Clark's novelet was the best you have published in some time.

Your editorials are always provocative. The one in the September issue was especially so. You mentioned the danger of stock characters. A good example of this in another field was the movie the "Thing." It has received very good reviews, and has been a hit at the box office. Yet it has the worst case of stock characterizations outside of a Captain Future novel. There is a scientist in it so stupid that he would be incapable of boiling water let alone discovering anything.

Still maybe that's what people want. In the June Harpers there is a very interesting article on good movies. The author maintains that when the studios make good movies, no one goes to see them. Science fiction is a different field than the ultra-mass circulation movies. You can make money if only a small section of the population buy your magazine. Perhaps you can appeal to an audience with imagination.

I like your story policy. You seem to be willing to publish all kinds of STF without too much emphasis on one type. There seem to be two dominant philosophies in STF. One the Van Vogt, Asimov school seems to believe man is some sort of a machine. All you need to do is tinker with him a little bit and everything that is wrong with him will be all right. It is no accident that one of these men produced dianetics. Dianetics is the logical conclusion of this philosophy. Naturally these writers write many stories where the protagonist or antagonist is some calculating machine who rules the whole thing.

Another type of story they love is one in which men are property of some malignant intellegences who cause all their troubles. This group had almost captured the science-fiction field when some of the opposition which had mainly been personified in Alduous Huxley began to be heard. The best of these were Ray Bradbury and in a different way Fredrick Brown.

These men along with A. C. Clarke and some others made your magazine, in spite of its terrible covers and makeup, the best in the field for a time. I hope that you can do it again. Good as many of their stories are I am getting tired of the calculating machine story. I think you understand this and will publish the kind of stories which place emphasis on men and not on machines.—3420 Louisa Street, Pittsburgh 13, Pa.

This is an interesting concept of yours concerning the mechanistic school in characterization, versus the natural or relaxed styles of Bradbury, Brown and Clark. Personally we get a kick out of both, and as you suggested above to our Mr. Merwin, our policy on TWS

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is going to be to publish all types without emphasis on any one.

There is only one criterion of a good story: is it effective, does it make the point it intended, are you able to visualize the events clearly and does its conclusion leave you satisfied? Of course there are as many criteria as there are people, and that's why we get gripe letters and rave letters.

FLOWERS AT LAST

by Dirce S. Archer

Dear Mr. Mines: I've been trying to write this letter ever since the August issue of TW came out, but have been too ill until now. Just think though, if I had managed it sooner it would start Dear Mr. Merwin instead of "Dear Mr. Mines" (according to Taurasi).

I am sure there are quite a number of your readers besides Mrs. Philip Gerding and myself that would be very grateful for the information she requests as to preserving pulp magazines. (She should have my trouble. I live in Pittsburgh.) Would it be possible to publish something on this subject? It is a very costly and tedious procedure getting back issues as I have been doing, and almost heart breaking to see them deteriorate.

Altho not a "pinhead"—this is written so late all possibility of its being published is eliminated—I object to Private Moir's stand on THE READER SPEAKS. Personally I like the letter section. As a matter of fact, I always read it first. I do have a suggestion for improvement though. Why not cut the portions of letters devoted to listing the contents of the different issues. Although I know it is necessary for an editor catering to such a vocal group as readers of fantasy and science fiction to know how various stories are received, is it necessary to publish such comments? Unless a story has been very outstanding, how can anyone except a memory wizard remember what such things as:

1. XXXXXX Stupendous! Best ever read!
2. YYYYYY Marvelous! A new twist!
3. ZZZZZZ Phewie! How could you?

refer to? I can't.

Good luck, Mr. Mines. I have read a comment by Mr. Merwin that "Sam Mines is the man Standard should have picked instead of me to edit their stf magazines as Mines knew all about stf and I didn't." If so, we readers can look forward to TW and SS being better than ever—and that will take some doing.—1453 Barnsdale St., Pittsburgh 17, Pa.

Thanks and don't mind the blushes. Merwin was simply being nice, as you must have guessed. But we are going to do our best to get better and better stories all the time and to a very large extent we are. As for the lists some fans send in of the stories they like or didn't like, we're surprised this bores you. Thought you'd be interested in comparing your tastes with others. We always thought this idea had some value.

We scouted around on this preservation of pulp magazine idea for you and found that it can be done, but it ain't cheap. Some libraries envelope each page in cellophane or glassine or some other transparent paper. Bookbinders can do this work or something similar. Another suggestion is to save a year's issues and have them bound in hard covers, as we do here in the office. That keeps the pages tightly together and excludes air to a large extent, which helps considerably. It also keeps your collection neat and available and I don't think it would be as expensive as wrapping each page in deep-freeze wrap. 'Course we're flattered no end that you want to keep TWS and STARTLING so badly.

IIIIILLLLLKKKK

by Bill Tuning
better known as
Orvil Stien

Dear Sam; I would like to tell you that I think all your mags are nothing but the best. I don't know which I like best. But don't get too happy. I have read all of James Blish's articles about "Our Inhabited Universe" to date. Words fail me, so I'll just say IIIIILLLLLKKKK! Now Blish is entitled to his views on the subject, but must he banter such childish theories about?

Anyway comment is as follows: (1) There is definitely oxygen and water vapor on Venus, the atmosphere being composed of a large amount of carbon dioxide, water vapor and a slightly smaller amount of oxygen. Blish says, "most of Venus' atmosphere consists of unbreatheable carbon dioxide. —" Unbreatheable hell! It's unbreatheable by animals, sure, but this points to a planet dominated by vegetable metabolism. (2) Another thing is that there is absolutely no pertinence to the subject of life on Venus when buster-boy Blish starts expounding this incomplete and unsupported theories about flying saucers. This is one of my tender spots. The idea that they come from Venus is absurd. As is very plainly pointed out by Scully and the scientists who study the subject that the saucers travel by means of Magnetic Propulsion, a theory that I daresay most of your readers are familiar with. So I won't attempt to explain it here. Anyway this is only a 148 page mag. Magnetic Propulsion would take one of the saucers to Venus and back in something like 22½ minutes! This is about twice the speed of light. I'll lay odds that you'll get six million letters, saying that I don't know what I'm talking about, why don't I keep my big mouth shut, and all that sort of rot you know.

Now all this information points to the fact that the saucers are definitely interstellar, perhaps intergalactic. How do I know all this? Where the hell did I learn it? Simple. It's all in Frank Scully's book, "Behind the Flying Saucers" (Popular Library, 25c) also published in cloth at $2.75. Science has been trying to keep it quiet, but Scully pulled a double nasty and published the facts. And how does science know all this for certain? Three flying saucers are in their possession! (Now pick yourself up off the floor and read on.) They crashed or else they landed and the controls fouled. Speaking of controls, there's a monstrous board of buttons that must be the control panel. As yet, nobody has been found with the guts to push one of 'em.

Anyway: (3) The surface of Venus (this is purely speculation) is nothing to be described in the crummy form of communications we earthmen use. Only ¼ of the sunlight gets to the surface. When this hits the layer of cool air it makes fog and steam. This seems to

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support the green hell theory, rather than explode it. Blish says that the surface must have a mean temperature of boiling water (over 200°). Then he turns right around and says that the reflection of light is very high (.76 to be exact). If this is so, how in the name of Old Harry (not Truman) can it be so hot?

As I was saying about the atmosphere before, it is, roughly an earth-type atmosphere. Such astronomers as Lowell and Maeller go so far as to say definitely that the atmosphere is the same as the Earth's and that its density is between 1.7 and 1.8, and that the refraction is 33".

Well anyway I'd like you to know that I think Blish writes wonderful STF, I've read and enjoyed much of it, but PLEASE DON'T LET HIM WRITE ARTICLES! Bye now.

Orvil, you are hereby appointed a one-man committee to hop out to Venus and check the facts. No hurry on this, you understand, but make it the first chance you get. We'll gas up the flying saucer.

THE LOYAL OPPOSITION

by J. Wells

Dear Sir: I believe the sentence is unpopular, but here it comes: This is my first letter to TWS (or any S-F mag for that matter). I am not here to praise your mag but to bury it. Hope you don't mind. I like reading THE READER SPEAKS but it's often a bit daft isn't it? I like your "Uh-huh" 's your "Wha hoppen" your "whatchamacallit" 's, your "Golly, gee whiz" 's. But really it's not literature, is it? I mean, is it? You must forgive me. I am English.

However, here goes: Although it can be argued that science-fiction in one form or another has existed for hundreds of years, it is undeniably true that science-fiction as at present written is of very recent origin. It is also undeniable that most of it is of very low quality, so

[*Turn page*]

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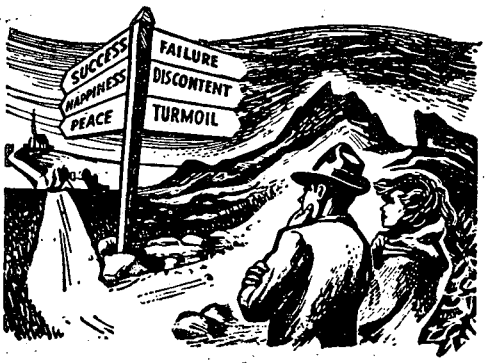

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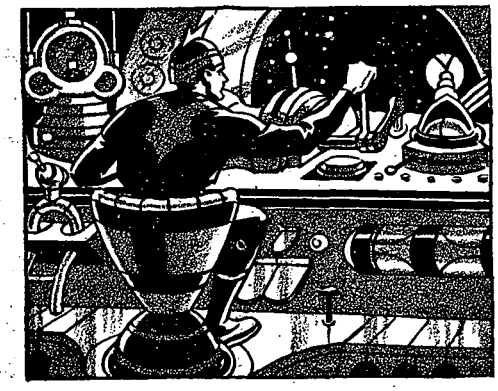

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low in fact that one is inclined to wonder if it will ever become a recognized serious form of literature. Very few writers of science-fiction have attained any large degree of fame. There are H. G. Wells and Jules Verne, through whom I first came into contact with science-fiction. There is Olaf Stapledon, whose LAST AND FIRST MEN I read at the age of 13 and which I think is perhaps the most thrilling book I have ever read; and there are C. S. Lewis and Edgar Rice Burroughs and possibly one or two more whom I have not heard of.

But the present day science-fiction is of an entirely different quality from that of most of the above. There are no really great names in the field at the present day, that are as well known to the public as the ordinary novelist. The vast majority of people regard science-fiction not merely without interest, but with disgust. To them it is trash, to be found side by side with lurid, sex-impregnated detective, cowboy or love-stories on cheap bookstalls. Perhaps this does not worry the average stf fan. He enjoys reading it and doesn't care if others don't. He does not spot all the pseudo-science in it and the little that he does spot does not irritate him. But to those who have loved the futuristic works of Wells and Stapledon, to those who love Science and can picture even vaguely the world of the future in which it will play an ever-more prominent part, the present low status of science-fiction is a horrible thing.

Science-fiction should be practically the only literature of a scientific world; it should inspire it and point the way to a future scientific progress. It should put petty novels about individuals and their adventures with the police and the opposite sex to shame. It should be a serious art.

Stf fans may vaguely hope that this will become true. But vague hopes are not enough. What is needed is action. But what kind of action? At first sight it seems perhaps magazine editors ought to bunch together to prevent pseudo science from entering their magazines. However, where is one to draw the line between science and pseudo-science? Should one cut out all reference to such things as hyper-space, psycho-kinesis, time travel? Obviously not. What can be done however, is to start some publication using technically perfect stories and articles of such high standard that all the other magazines fall into ill-repute and to maintain that standard. It would be easy to avoid certain ideas known to be unscientific, such as the mention of "new" metals with miraculous properties.

There are only 98 elements known and all others would be so unstable as to be totally uninteresting from a practical point of view. Again, somebody ought to stop putting love stories and detective stories on an interplanetary or interstellar scale and calling them science-fiction. We need more collaboration between "respectable" scientists and "cranky" (according to the public) S-F wirters. Somebody ought to start a really serious journal, analyzing science-fiction ideas with a view to discovering their plausibility and possible contribution to scientific progress. Who knows but that this might not one day rank as a science—futuristic perhaps, being one step ahead of research, but pointing the way for progress. Who's going to help with the first steps?—Students Union, Leeds University, Leeds, England.

There you are, men, you've had it. We got all wound up to take a swing at Mr. Wells, and then decided to leave him in your hands. So go to it, it'll give him a winter of hot reading. See you all back here in February.

—THE EDITOR.

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Science Fiction BOOK REVIEW

INTERPLANETARY FLIGHT, An Introduction to Astronautics, by Arthur C. Clarke, L. Harper & Brothers, Publishers, New York, $2.50.

The mere fact that a book like this is published today is a quiet kind of revolution which will stagger you if you stop to think about it rationally and calmly. Here is a book—not a large one, but crammed with information about space, planets, stars, distances, stresses and strains and what have you—which deals with the mathematics of space flight as nonchalantly as your Aunt Jennie gasses up the old bus for a casual trip to the village postoffice to pick up the latest Sears, Roebuck catalogue.

What Mr. Clarke says in effect here is that space flight is out of the wild dream category. The conditions under which it is possible are well known—are even, to a large part, available. And here are the charts, the graphs, the tables and equations which an engineer will have to have if he proposes to build a space vessel and launch it to an extra-terrestrial objective.

However, it has not been written for engineers. It has been written for the layman, to make him acquainted with the sort of problems facing an engineer who wants to build a spaceship. Thus it is not overly laden with equations in the higher mathematics. If you happen to be proficient with a slide rule you can doubtless stick doggedly to Mr. Clarke's footsteps all the way.

But if you aren't—like this reviewer—you can take his math for granted and go along for the smoothly written descriptions of rockets, orbits, spaceships and space stations and a wealth of material about the planets which reads like fiction—which would have been fiction ten years ago. Mr. Clarke is a writer and he is not addicted to dullness. There are also a number of excellent full page plates from paintings by R. A. Smith, plus diagrams and sketches, to smooth the way. If you already own Willy Ley's more massive book, ROCKETS, MISSILES AND SPACE TRAVEL, you'll like this handy guide for its more condensed material as a supplement and for its own point of view.

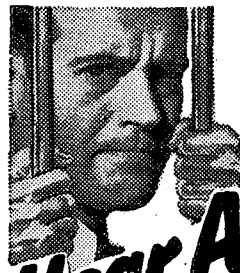
●

BLINDED THEY FLY by Vol Molesworth, Futurian Press, Sydney, Australia, $1.50.

Collectors may have no objection to digging up $1.50 for this pamphlet sized job, which is

[*Turn page*]

DEAFNESS WAS LIKE A PRISON..



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a first edition limited to 200 copies and dedicated to H. P. Lovecraft and Charles Fort. Despite its late appearance (March 1951) the story belongs to an earlier school of science-fiction writing. The hero, Robert Mundorf, stumbles on a cave which houses a Martian (and a particularly gruesome, BEM-ish bloodthirsty one) from which he flees, falls through a dimension he didn't know was there and lands in front of his own house. Thirteen years later he discovers the cave again (and this time it has moved to the Mojave Desert from Australia) goes in once more, ducks a pass from the still hungry Martian and again trips over the fourth dimension and lands in his own front yard. This time, we presume, he has had enough. Unanswered are some technical questions, but the author is concerned only with making a weird and fantastic effect, which gave rise to our earlier remark that this belongs to a more previous school of stf fiction.

Molesworth has nine other volumes to his credit and fans who like to know what is going on in the field might have a look at this one. Our own Jimmy Taurasi of the FANTASY-TIMES is the U. S. Agent.

●

THE BLIND SPOT by Austin Hall and Homer Eon Flint, Prime Press, Philadelphia, $3.50.

THE BLIND SPOT, to quote another review, has waited thirty years for hard covers. A bottle of milk could not survive such a wait. A woman might. THE BLIND SPOT, in our opinion, barely does. From one stand, it may be heartlessly roasted; from another, half-heartedly recommended. We'll accentuate the positive first:

There's little doubt that this book is a fantasy "classic." After three decades (it first appeared in 1921) it remains a rather extraordinary job of story-telling, loaded with alien hues and fascinating if somewhat simplistic philosophies. A must item for collectors.

Unfortunately, because times change and styles with them, many indisputable classics are virtually unreadable. THE BLIND SPOT ranks high in that category, being comprised of the most stuffy and obese verbiage we've seen in too short a time. To say that it is stale, that many of its concepts have been subsequently proven to be whopperjawed, others subsequently better handled, that all of them are by now familiar, is no fair criticism, since they were hot stuff when the book appeared. This, however, makes it no more thrilling to modern readers, with the exception of those who enjoy such classics for their classicality, i. e. historical interest and significance. To them, and to collectors, we recommend THE BLIND SPOT.

Six typical Hannes Bok half-tones—by typical, we mean good.

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The FRYING PAN

A Commentary on Fandom

DEAR THING: You are a Viper. You are a Monster-eyed Bug. I have sent you two issues of my fanzine, HALF-LIFE, for review in your darn column. The first you ignored. The second you placed in your ratty B list, way below Larry Yerp's cruddy old SPACEWAZE, which you had the colossal mitigation to put in the A list. This is rank prejudiced bias. My mag is much better than Yerp's, being printed on 100% irascible bond, while it is a fact that Yerp buys his paper by the roll. HALF-LIFE features fanart, fanarticles and f(an)iction by outstanding fans of the Squeedunk, Ohio, KOSMIC KINNISONS KLUB, and while I have nothing personal against Yerp, his mag *is* a one-man job and, after all, he *did* drop one of his heads in a Mixmaster when he was four years old, so what can you expect? *I'll* tell you what you can expect—I got a Chemcraft set, so you can expect an atom-bomb some fine morning. How would you like that, you droopy bat-fannied grulzak, huh? And I'm not going to read your junky mag any more, and from now on I'm going to send HALF-LIFE to Mari and Rog, so nyah-h-h-h-h-h, br-r-r-r-r-rt!

Mine sciencifantasticly,
Morty Bratwurst
THE SLAN-FAN OF SQUEEDUNK

The above surly communique, while fictional, has been received in essence too often for the comfort of your reviewer. Chemical and spectroscopic tests have so far failed to reveal any sly enclosures of radioactives or alien bacteria; but it is truly said that "Woman hath no fury like a fan-editor scorned," so we've decided to quit while we're ahead. No more A list; no more B list. We love life.

Too, alphabetizing the things is a pain in the glottis. Henceforth the listing will be haphazard, with only our comments remaining, as

[*Turn page*]

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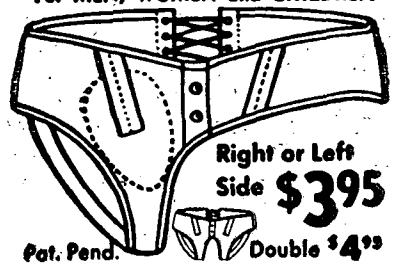

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THE JOURNAL OF SPACE FLIGHT, 424 North Grant St., Hinsdale, Illinois. Editor, Robert Friberg. Published monthly.

Not a fanzine, but certainly of interest to fans, so it gets a mention. Wayne Proell leads off with Part 2 of "The Evasion of Hazardous Objects in Space," entitled "The Apparatus for Evasion." Proell's solution is a pair of multiple antenna fanburst radiators, feeding to a tube-triggering thyratron brain; solid stuff, neatly presented with diagrams. Norman Bowman winds up the issue with "Rocket Abstracts," continuing what is evidently a rather exhaustive bibliography on rockets and such.

SCIENCE FICTION DIGEST, 459 Sterling St. N. E., Atlanta, Georgia.

Debut. No price on the copy we got, and the editorial identified its author only as Henry, which seems to us unbecoming modesty since the 'zine is a good starter. Made up of reprints from the field, with one of whose contributions, John Wilson's one-page snarl at fan-poetry, we devoutly agree.

THE OUTLANDER, 2962 Santa Ana St., South Gate, California. Editor, Stan Woolston. 15¢ per copy.

Alan Hershey's temperate piece on Dianetics appealed to us most—a welcome relief from the yes-no screams too evident in recent fanzines. One suggestion, fellers: if you're going to index your mag, why not number your pages?

FANTASY-TIMES, 137-03 32nd Avenue, Flushing 54, New York. Editor, James Taurasi. Published bi-weekly. 10¢ per copy.

Despite its lack of bulk, Taurasi's news-zine remains consistently top-drawer. We give scant credence to rumors that F-T has often printed stf news before it happens; but, failing that, it is speedy and mostly accurate. However, a headline on this issue's first page—"TARZAN COMICS GOES MONTHLY"—caused us to immediately flee into the interior. 'Zat stf?

EUSIFANSO, 146 East 12th Avenue, Eugene, Oregon. Editor, Rosco Wright. 10¢ per copy.

Published irregularly, with extreme neatness, by the Eugene Science Fantasy Artisans. A better-than-average cover leads into a mixture of contents both superior and definitely otherwise. Our opinion is that EUSIFANSO would benefit by concentrating on articles, letting fan-fiction fall where it may—preferably elsewhere. Keep your eye on this one, though; got moxey.

THE BIG O, "Illegitimus Non Carborundum," 614 Norvell St., El Cerrito 8, California. Editors, Cpl. C. L. Jacobs, Es and Les Cole. Published quarterly.

A SAPS-FAPAzine. The cover represents a Department of the Interior report on the geology of the Solis Lacus region, dated 1964, and that's the tip-off: this baby's got personality. From the editorial—a rather sullen explanation of the change in title—to the Coles' four-fisted slambasting of the Hawks-Campbell film "The Thing," the mag jumps. Featured are Poul Anderson, Hannes Bok, Eando Binder, and that reincarnation of Benchely, comedian Henry Morgan. Regarding the "Thing," however: temper, temper, our dear Coles, and a drap o' moderation; your flaming review of "Thing" was as peppered with inaccuracies as the picture itself. And you neglected, by the way, the most apparent error of all: would the Thing, supposedly of a high order of intelligence, howl and blunder around fighting with its hands like a beast? No side-arms? Not even, first off, the gumption to conceal its hostility, surrender meekly to the so-called scientists, establish communication, perhaps try to grow its thing-babies later and less conspicuously? If it was

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scouting Earth when it cracked up, preparations for the flight must logically have included orders covering possibility of contact—orders on temper, temper, old Thing, and a drap o' etc. Item: oh well, maybe it was starving. Item: we still got a hell of a bang out of the film, and recommend it inaccuracies or no.

FANTASY ADVERTISER, 1745 Kenneth Road, Glendale 1, California. Editor, Ronald Squire. Published bi-monthly. 15¢ per copy.

Some good articles, book reviews, and a passel of book and magazine bargains of interest to the scifantasy collector make up this one. Just about tops in its field.

SCIENCE-FICTION NEWSSCOPE, 43 Tremont St., Malden 48, Mass. Editor, Lawrence Ray Campbell. Published monthly. 5¢ per copy.

A second-rate job of reproduction doesn't detract from the newsiness of this item, though we are inclined to doubt the thundering subtitle "COMPLETE COVERAGE OF ALL THE NEWS." Separately enclosed was one page of kute komments labeled "FOO (This is not a zine for SAPS, FAPA, UAPA, NAPA, or AAPA. This is just plain FOO)." We agree.

THE TORQUASIAN TIMES, 1041 Cayuga St., Santa Cruz, California. Editors, R. H. Reneau and Walt Sauers. Published irregularly. 25¢ (Yipe!) per copy.

Self-styled "The Plutocrat of Science-Fiction," this one offers fan-stuff good and bad. The stories, with the exception of a well-written job by Russel Branch, are almost uniformly hair-raising. Some poetry present, including a Robert W. Service reprint that was distinctly welcome. Articles, foremost among them Harvey Gibb's "Sex and Science-Fiction," which relays the startling intelligence that a fan-club down in the cotton country is threatening to "start a censor bureau, listing the readable fanzines and prozines." No printable comment. Also the following:

ACCOMPLISHMENT
by G. W. Hillakers

I screamed, "Wzcxvbnmk!"
An' it ain't easy.
YOU try it sometime.

We did, but it came out a plain ordinary scream.

SCIENCE FICTION NEWS LETTER, Box 260, Bloomington, Illinois. Editor, Bob Tucker. Published six times per year. 15¢ per copy.

An experimental issue, new format; an improvement, we think. Just about the only improvement possible on this tried and true news-zine. Inside front cover features an adv. by the Detroit Science Fiction League: FOR A GREAT CONVENTION, VOTE FOR THE DETENTION. DETROIT IN '52.

Yuk.

FANTOPICS #1, Box 622, Riverside Station, Miami, Florida. Editor, Fred Hatfield. Published "if-and-when." 10¢ per copy.

In his accompanying letter, Ed. Hatfield allows as practically all the artwork, along with layouts, printing, folding, stitching and trimming by hand, is by Ed. Hatfield. To which we reply, "Well done!" six times; for Hatfield's first venture into fanzine publishing promises, as hoped for in a lead-off article by Dr. Keller, to shape up as one of the permanent swap-zines. Reason: bear-cat enthusiasm. The theme chosen for this issue, however—"Music 'n' Stf"—didn't seem very properly covered; if there is, in truth, a consanguinity between the two to be covered.

The FANatic FANzine, SW Hill and Hanover, Charleston, S. C. Editor, Bobby Pope. 10¢ per copy.

Most interesting in this effort was Red Bogg's "Fantasy Crossword"—we're looking forward to the next issue con-

[*Turn page*]

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taining the answers to the damned thing. We—er—bogged down. Also fiction and some poetry, the latter, we dutifully admit, not bad in spots. Should improve with age.

TRILOBITE #2, 2010 McClendon, Houston, Texas. Editor, M. McNeil. 5¢ per copy.

An unhappy little critter featuring a front cover; two drawings, about one of which readers are encouraged to write a story; a two-paragraph editorial; two one-line book reviews; a pome; a one-page story; a back cover. Clearly printed, well put together; but needs to gain a little weight. Haze it out to graze, Texas—but keep it out of the alfalfa.

STF TRADER, Box 3, Tyro, Kansas. Editor, Jack Irwin. 10¢ a copy, 7 issues for 50¢.

Another swap-zine, returning after a year's absence; of interest primarily to collectors, to whom it offers some whopping buys.

RHODOMAGNETIC DIGEST, 2524 Telegraph Avenue, Berkeley, California. Produced by Don Fabun. Published at intervals of six weeks.

Vol. III, No. 1 of fandom's twinklingest little magazine breezed into our office just in time to hop into this month's Frying Pan. But we're not panning it; very far from it. The Elves', Gnomes' and Little Men's Science Fiction, Chowder and Marching Society has assembled, as usual, a nifty bunch of pages. Included: a sour chuckle at Heuer's MEN OF OTHER PLANETS; a raised eyebrow at the recent curious Dianetic Research Foundation report; a roar of outrage at that poor bedeviled "Thing," and other assorted items of interest including a center-folio of "Fantastic Sketches" by Bob Beetem, which, together with the rest of the artwork and practically everything else in the mag, is g-o-o-d.

PEON; Editor, Charles Lee Riddle, PN1, USN, Fleet All Weather Training Unit, Pacific; c/o Fleet Post Office, San Francisco, California. Published bi-monthly. 15¢ per copy.

A Wagnerian cover (Buster Crabbe in Kinnison garb triggering vitamin-gun) embraces, as covers generally do, contents. Gene Hunter's yarn roused us to a weary nod, being of the "O, the sardonic folly of human frailties!" school, but otherwise there was adequate yardage of the peppy prose one learns to expect of this Hawaiian 'zine.

FAN-VET, 127 Spring St., Paterson 3, New Jersey. "Published in the interests of the fantasy fan in the U. S. Armed Forces."

Dedicated to service, as it were—a combo newssheet-and-trading-post slanted at the fan in khaki, to whom it communicates abbreviated fan-news and servicefan wants-and-swaps perhaps difficult for him to get elsewhere; therefore, a crisp salute to Commander (how's that again, Jimmy?) James Taurasi and Secretary Ray Van Houten. Issue at hand—number 7—her 'ls the proposed constitution for THE FANTASY VETERANS ASSOCIATION, designed to inform interested parties that: 1) FVA, in its request for donations to cover aspects of its service (such as mailing stf mags to fan-vets overseas, etc.) is on the level, which it is; 2) the aims of the group are as stated above. Note to non-collectors: here, seems to us, is the best possible way to dispose of mags you have finished . . . send 'em, by way of Taurasi & Co., to the GI's. No?

Well, that about winds it up this trip—a better than average bunch of 'zines. We'll be back—and we hope you will, too—in the January STARTLING. Until then . . .

—*Jerome Bixby*

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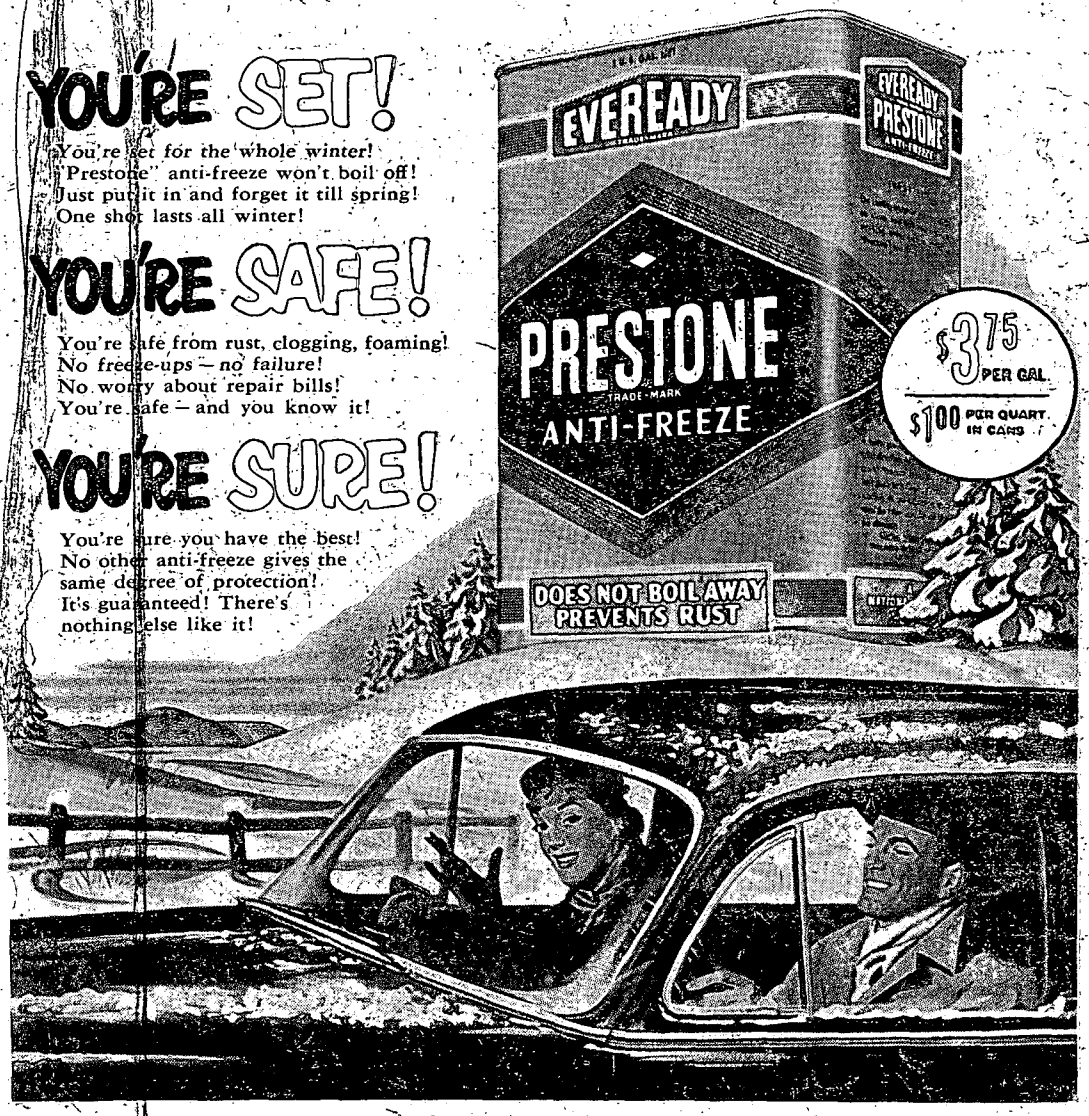

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